General Review
of the Conditions and prospects
of British Trade in India
1919-20, 1920-21 & 1921-22

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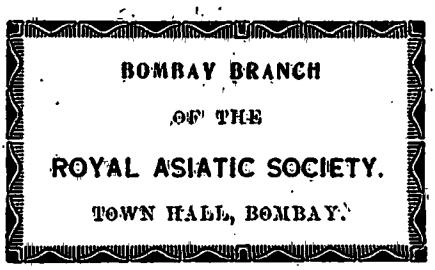

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DEPARTMENT OF OVERSEAS TRADE.

GENERAL REVIEW

OF THE

CONDITIONS AND PROSPECTS OF BRITISH TRADE

IN

INDIA

134660

During the Fiscal Years 1919–20 *and* 1920–21,

Revised to October, 1921.

BY

MR. THOMAS M. AINSCOUGH, O.B.E.,
His Majesty's Senior Trade Commissioner in India and Ceylon.

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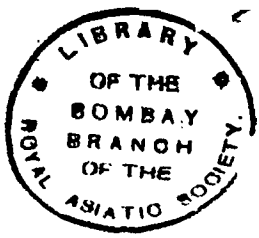

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DEPARTMENT OF OVERSEAS TRADE.

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2. The Commercial Diplomatic Service attached to the British Diplomatic Missions in foreign countries.
3. The British Consular Service in foreign countries.

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2. The Commercial Diplomatic Service consists of between forty and fifty posts in all, and the officers of the Service are stationed in all the more important foreign markets of the world. With the exception of a few officers who, for the time being, hold appointments as "Commercial Commissioners," the members of the Commercial Diplomatic Service are styled "Commercial Counsellors" in the highest grade, and "Commercial Secretaries" in the three lower grades. They are members of the staff of the British Embassy or Legation in which they serve.

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4. Members of British firms are urged to call upon the Department's Representative abroad when they visit an overseas country. It is also important that they should make a point of their Representatives abroad keeping in close touch with the Department's officers.

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NOTE.

It should be understood that the views expressed in annual reports are the views of the officers themselves, and are not necessarily in all respects the views of the Department.

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COVERING DESPATCH.

To the RIGHT HONOURABLE STANLEY BALDWIN, M.P.,
President of the Board of Trade.

Office of H.M. Trade Commissioner,
6, Royal Exchange Place,
Calcutta.

21*st July*, 1921.

SIR,

I HAVE the honour to forward for your information a general review of the conditions and prospects of British trade in India during the fiscal years 1919-20 and 1920-21.

The period under review has been so abnormal and has been so markedly a transitional period of recovery after the war, that it is extraordinarily difficult to draw safe conclusions from the many tendencies which emerge from a time of such violent fluctuations. These difficulties are increased by the fact that I am unable to write from personal observation of conditions during 1920, as I was absent on an official visit to Persia and the United Kingdom during the whole of that year. I have therefore been forced to draw upon Indian Government publications and other sources for most of my facts, and this accounts for the unusual number of quotations from various authorities.

I have to acknowledge the great assistance which the Commerce and Industry Department of the Government of India has continued to render during the period. In particular, I am indebted to the Director-General of Commercial Intelligence, India, the Director of Statistics, the Controller of Currency, and the various Collectors of Customs for information which has always been readily furnished.

I have the honour to be,

Sir,

Your most obedient Servant,

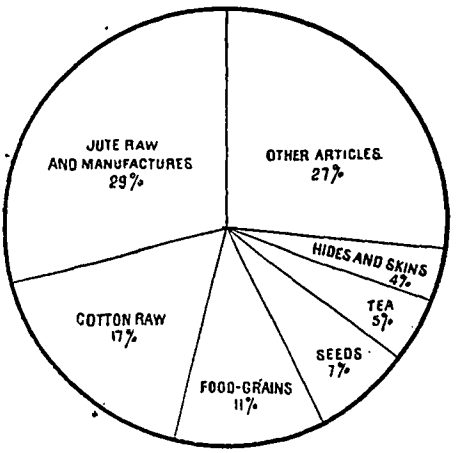
THOMAS M. AINSCOUGH,
H.M. Senior Trade Commissioner in India.

DISTRIBUTION OF INDIAN TRADE
(*a*) COMMODITIES.

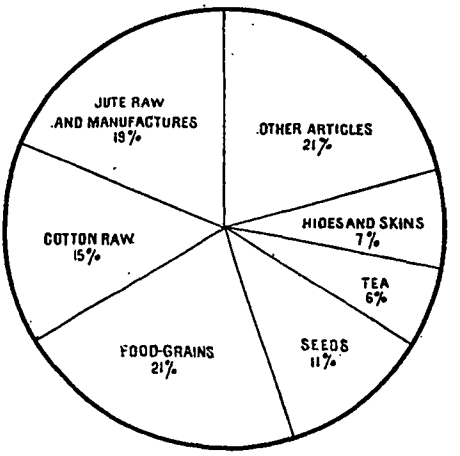
Relative proportion of principal groups and of commodities in the Export and Import Trade of India in 1920–21, as compared with the average of the five pre-war years, 1909–10 to 1913–14.

EXPORT TRADE.

1920–21
(Year under review).

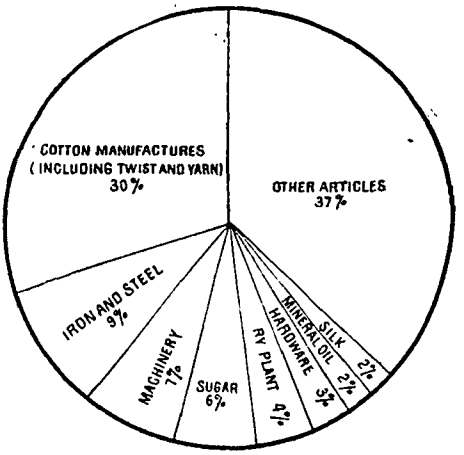


1909–10 to 1913–14
(Pre-war average).

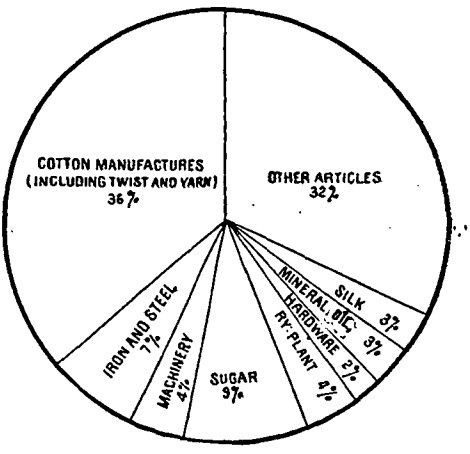


IMPORT TRADE.

1920–21
(Year under review).



1909–10 to 1913–14
(Pre-war average).



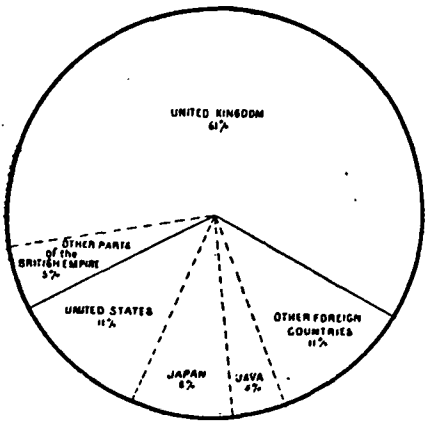
NOTE.—These Charts have been courteously furnished by the Director of Statistics, India.

DISTRIBUTION OF INDIAN TRADE
(*b*) COUNTRIES.

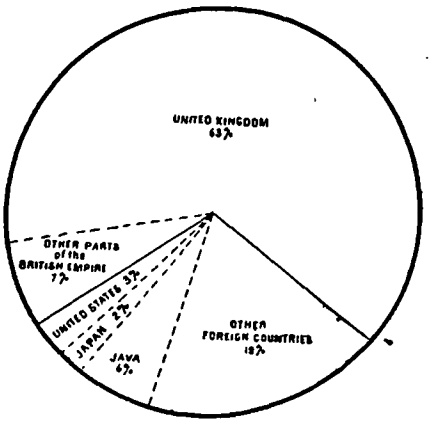
Relative share of the principal countries in the Import and Export Trade in 1920–21, as compared with the average of the five pre-war years 1909–10 to 1913–14.

Import Trade.

1920–21
(Year under review).

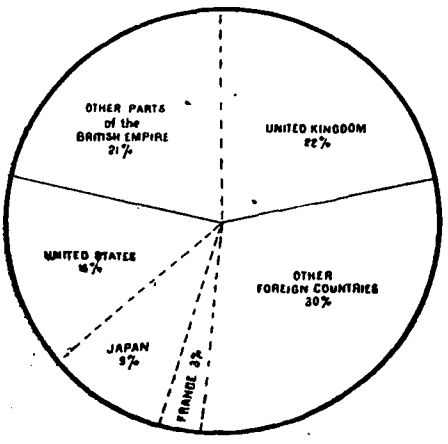


1909–10 to 1913–14.
(Pre-war average).

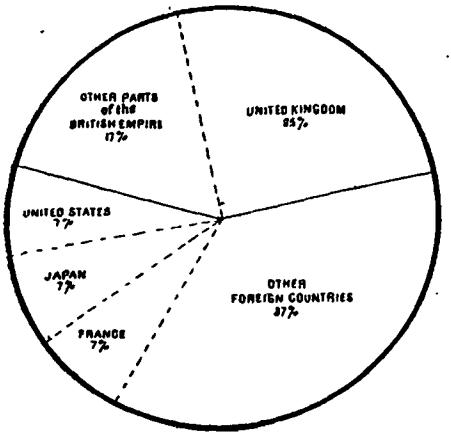


Export Trade.

1920–21
(Year under review).



1909–10 to 1913–14
(Pre-war average).



CHAPTER I.

GENERAL REVIEW OF THE PERIOD.

Introductory.—The period covered by this Report, that is the two years ended March, 31st, 1921, is one of the most abnormal and interesting periods in the recent history of British trade in India. My last report dealt with the position of British trade at the close of the war and described the various new factors and disturbing influences which had been introduced as a result of the war. The present report covers the transitional stage when the course of trade was still influenced by the aftermath of the great struggle in Europe, but when the new post-war forces were beginning to assert themselves. We are still in the midst of this transitional period and have still far to go before we reach what may be called the post-war position of equilibrium. Consequently, it is unsafe to draw more than tentative conclusions from the extraordinary record of the past two years. I therefore propose to describe the course of events, to throw out, with all diffidence, a few general suggestions as to their probable trend, and to leave my readers to form their own conclusions from the mass of general tendencies which are gradually shaping themselves and which will in due course crystallise into the normal position of the future.

Outstanding Features of 1919-20.—The year 1919-20 was a year of phenomenal trade activity, both in the United Kingdom and in India. I use the adjective advisedly as the trade boom of that year was entirely abnormal, was based on unsound foundations and gave rise to a fictitious prosperity, the false nature of which subsequent events have only too amply proved. In the United Kingdom, manufacturers were inundated with the accumulated orders of nearly five years of war from all parts of the world and were obliged, in many cases, to decline lucrative business owing to their output being booked for months and even years ahead. The cost of living rose steadily resulting in further labour demands and there appeared to be no limit to the upward trend of prices for all classes of goods. In India, the monsoon of 1919 had been a good one, trade was brisk and both exports and imports attained record figures, the value of the former exceeding that of the latter by no less than 56 per cent. This enormous balance of trade in India's favour synchronising with a rise in the price of silver during the year from 48½ pence per ounce to 89½ pence per ounce forced up the exchange value of the rupee well above two shillings.

The end of the war found India with depleted stocks of foreign merchandise and with five years arrears of purchases to make good. Moreover, she had accumulated very considerable buying

power, as the country emerged from the war in a generally prosperous condition. The rise in exchange considerably enhanced this purchasing power. The natural result was that orders on a prodigious scale were placed in the United Kingdom, United States, Japan and other countries. The bulk of these purchases were made at the highest levels of prices.

In February, 1920, the Indian Currency Committee Report was published and the trading community learnt that it was recommended that the rupee should have a fixed exchange value of one rupee = 11.30016 grains of fine gold, that is, one-tenth of the gold contents of the sovereign.

A detailed consideration of the exchange position and the action of Government is given in Chapter VII. I merely wish to state here that the report of the Currency Committee and the subsequent sales of Reverse Councils* created an impression in the minds of many people that they might look forward to a period of high rates for some time ahead. Further purchases of goods were made in overseas markets and the bulk of these orders were for delivery during the year 1920-21.

The Economic Depression, 1920-21.—The past year opened, therefore, at a time of feverish activity and apparent general prosperity, but the boom proved to be a very short-lived one. In the United Kingdom, manufacturers found in the early summer of 1920 that not only were there no further indents forthcoming at the price levels they were forced to quote, but the impoverished state of the world began to be apparent and appeals for cancellations of existing contracts came in from all the great consuming markets. This state of affairs became steadily worse and resulted by the end of the year in the wholesale curtailment of industry and unemployment on an unprecedented scale.

India, being dependent on Europe and the United States for the sale of her produce, was soon affected by the changed conditions. The internal disorganisation and financial chaos in and the adverse exchange rates ruling with Central Europe brought about a complete cessation in demand for Indian exports such as jute, cotton, hides and oilseeds, which are the backbone of the export trade. The process of deflation of prices in the United States and the United Kingdom not only checked fresh purchases, but entailed very heavy losses on stocks of tea and other commodities. Russia remained isolated from the rest of the world. The severe industrial crisis in Japan resulted in a marked falling-off in her consumption of Indian cotton. The monsoon of 1920 was a poor one and the average rainfall over the plains of India as a whole was 12 per cent. below normal. The country was also suffering from many internal difficulties due to the results of war such, for instance, as the serious shortage of rolling stock on the railways, which hampered the movement of crops for export. All these causes contributed by the end of

* *i.e.*, Sterling drafts on London sold by the Indian Council.

1920 to bring about one of the most acute periods of economic depression which had been experienced in India for decades.

In the meantime, the enormous volume of high-priced goods ordered at various times since the Armistice arrived at Indian ports in unprecedented quantities, the gross total value of the imports during the year being actually double the average of the five preceding years. This flood of imports coinciding with a slump in the export trade resulted in an excess of imports of merchandise of 79 crores and a net balance of trade against India of 49 crores. The price of silver in London fell from 72*d.* to 30*d.* per ounce during the year, and the effect of these two factors was a collapse in exchange for rupees from 2*s.* 4*d.* (Telegraphic Transfers) on April 1st, 1920, to 1*s.* $2\frac{7}{8}$*d.* (Telegraphic Transfers) on March 7th, 1921.

Importers were consequently faced in most cases with extraordinarily heavy stocks of piece goods, metals, hardware and general imports purchased at the top of the home market at a time when exchange was in the region of 2*s.* or over, and these goods arrived to a stagnant market with exchange standing at about 1*s.* 3*d.* or 1*s.* 4*d.* In most cases importers and dealers were either not able to, or were unwilling to fix exchange at the time of placing the order, with the result that they had to meet losses varying from 50 to 70 per cent. on the cost price of the goods. Moreover, inasmuch as prices in the producing centres had fallen considerably, there was the additional menace of their being undersold by more recent purchases.

Recent Deadlock in the Import Trade.—Seeing that they were obliged to face losses which, in many cases, they were utterly unable to meet, the Indian importers in Bombay, Delhi and elsewhere sought for a means of escape. The first move was taken by the Native Piece Goods Association of Bombay, which body—in December, 1920—passed a resolution pledging its members to refrain from settling any contracts at a lower rate than two shillings to the rupee, on the grounds that they had been misled by the Government statement to the effect that the Currency Committee's recommendations advocating the linking of the rupee to gold at the ratio of Rs.1=$\frac{1}{10}$ of the gold content of the sovereign would be adopted. This was followed by the passing of similar resolutions in Delhi, Amritsar and other markets. Most Indian importers in these centres declined to accept their drafts, failed to meet them at due date and refused to take delivery of the goods unless at an exchange rate of 2*s.* The result has been a complete deadlock and utter stagnation in the market, which has lasted for very many months, but which is showing signs of gradually clearing. The burden of the strain has been borne by the banks, who have been saddled with a steadily increasing volume of overdue bills, almost all of which have been discounted on the other side. It is estimated that the value of repudiated and overdue drafts in all India and Ceylon

some months ago reached the stupendous total of £30,000,000. The banks have adopted throughout a most helpful and broad-minded attitude. They realised that to enforce their just claims by actions in the Courts would merely have precipitated a severe crisis which would have delayed recovery indefinitely. Accordingly, they have contented themselves with pressing their clients as far as was reasonably possible and holding the bills until such time as the market improved. There has been, to all intents and purposes, a moratorium, and importers in many cases have not yet been forced to meet their losses. In the meantime, in many instances, settlement has been effected by compromise and the granting of compassionate allowances by home shippers and the importing firms in India. There still remain (July, 1921) an enormous number of repudiated and overdue bills in the hands of the banks. Of these, probably over 50 per cent. represent piece goods shipments, and in view of the shortage of imported piece goods throughout India, it is hoped that—given a good monsoon—the greater portion will be cleared before the end of the year.

The future almost entirely depends on a good monsoon, which would bring prosperity to the cultivator, would reduce food prices and would stimulate demand. The prospects so far are promising, and it is hoped that there will be a great clearance of imported goods this autumn. The losses to be liquidated, however, are so heavy that it is only to be expected that there will be a residuum of dealers utterly unable or unwilling to meet their commitments. It is possible therefore that we may see a number of failures towards the close of the year. On the whole, however, there is ground for hope that the situation will be cleared up without any undue shock to credit conditions.

Damage to India's Credit by the Policy of Repudiation.—As a result of the increasing general prosperity of India and the spread of education and knowledge among the Indian mercantile community, a distinct tendency towards direct trade between Indian importers and overseas suppliers has been one of the features of the past few years. This movement has been particularly noticeable in Bombay, and also in the inland distributing centres such as Delhi, Amritsar and Cawnpore. There is no doubt whatever that it has contributed materially to the extension of British trade in India, and it would appear to be a tendency which is likely to grow. London, Manchester and other home export houses have in the past been prepared to ship to approved Indian indentors, usually on D/P (documents against payments) terms, the branches of the exchange banks in India maintaining the drawer's lien on the goods until the drafts were met. In certain cases the goods were shipped, documents against acceptance. The banks have greatly facilitated the trade in up-country centres such as Delhi and Amritsar by clearing the goods through to destination and by storing them until the drafts were honoured.

It is a most noteworthy fact that the difficulties in the recent crisis have been greatest in those centres such as Delhi and Bombay where the most liberal financial and trading facilities

have been granted by British exporters to Indian importers and bazaar dealers. Liabilities have been repudiated and drafts dishonoured on a scale hitherto unknown. It is only natural that home firms, who have hitherto been willing to accept indents direct from bazaar importers and to draw on them in the usual manner, should be doubtful whether the trade is worth carrying on if the Indian importer has no hesitation in refusing to meet his bills when the market goes against him and he is faced with a heavy loss.

The inevitable result is a strong reaction on the part of many British exporting houses against direct dealings with the bazaar, and this can only be overcome by a changed attitude in certain quarters in India towards the responsibilities attaching to a business contract.

After giving much study to the question, I am convinced that, if carefully conducted on sound lines, and with responsible Indian firms, the direct trade is a reasonably safe one, particularly in those cases where the home shipper has a resident representative in India to safeguard his interests. It must be admitted that in the boom of 1919 and early 1920, credit facilities had been given in many cases to Indian firms who were not of sufficient standing to warrant them. Moreover, the recent crisis is entirely abnormal. The trade as a whole should be judged by its results over a lengthy period of years.

It will be a great pity, both from the point of view of the shipper and of the importer, if this trade receives too great a setback through the action of a certain number of unprincipled individuals. I would like to take this opportunity of appealing to the many reliable Indian importers to use their influence with a view to the re-establishment of this market in the eyes of the world so that it may be possible in future to open up even closer trading relations between the two countries. It is also to be hoped that British export houses will, in future, exercise greater discrimination in the granting of credit and will, wherever practicable, appoint resident representatives to watch their interests.

General Position of British Trade in India.—The following table, compiled by the Director of Statistics, clearly shows the percentage shares of the United Kingdom, the British Empire as a whole and foreign countries in the trade of India during the year 1920-21 as compared with the two previous years and the last complete pre-war year :—

	Imports.				Exports, including re-exports.				Total Trade.			
	1913–14.	1918–19.	1919–20.	1920–21.	1913–14.	1918–19.	1919–20.	1920–21.	1913–14.	1918–19.	1919–20.	1920–21.
	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.
United Kingdom	64	46	51	61	24	28	30	22	41	35	38	44
British Possessions	6	12	10	5	14	24	14	21	11	19	13	12
Total British Empire	70	58	61	66	38	52	44	43	52	54	51	56
Total Foreign Countries	30	42	39	34	62	48	56	57	48	46	49	44
Total Value of Trade in R (lakhs)	1,83,25	1,69,03	2,07,97	3,35,60	2,48,88	2,53,88	3,26,80	2,56,35	4,32,13	4,22,91	5,34,77	5,91,95
PRINCIPAL COUNTRIES.												
British Empire—												
United Kingdom	64·1	45·5	50·5	61·0	23·7	28·5	29·6	21·9	40·7	35·3	37·7	44·1
Ceylon	·4	1·8	1·2	·6	3·7	4·2	3·4	4·6	2·3	3·2	2·6	2·3
Straits Settlements	1·9	3·3	2·9	1·4	2·8	2·9	2·3	3·6	2·4	3·1	2·5	2·3
Hongkong	·5	1·1	1·3	·7	3·2	2·0	2·8	2·8	2·0	1·6	2·2	1·7
Australia...	·5	1·3	1·6	·4	1·6	2·1	1·0	2·4	1·2	2·0	1·2	1·3
Egypt	·2	1·0	·6	·5	·9	5·8	1·2	1·5	·6	4·0	1·1	·9
Other British Possessions	2·4	4·0	2·9	1·4	2·1	6·2	3·7	6·2	2·8	4·8	3·7	3·4
Total British Empire	70·0	58·0	61·0	66·0	38·0	52·0	44·0	43·0	52·0	54·0	51·0	56·0
Foreign Countries—												
United States	2·6	9·5	12·1	10·5	8·9	13·1	14·9	14·8	6·2	11·7	13·8	12·4
Japan	2·6	19·8	9·2	7·9	9·2	11·6	14·3	9·5	6·4	14·9	12·3	8·6
Java	5·8	6·7	9·4	4·6	·8	1·4	·6	1·2	2·9	3·5	4·0	3·2
France	1·5	1·1	·8	1·1	7·1	3·5	4·8	3·1	4·8	2·5	3·3	2·0
China (exclusive of Hongkong and Macâo).	·9	1·5	1·8	·9	2·3	1·2	3·4	3·3	1·7	1·3	2·8	1·9
Belgium	2·3	—	·3	1·6	4·9	—	3·1	5·0	3·8	—	2·0	3·1
Turkey, Asiatic...	·3	·3	·4	·3	1·2	2·9	2·7	2·8	·8	1·9	1·8	1·3
Italy	1·2	·5	·6	1·2	3·2	3·8	2·4	2·6	2·8	2·5	1·7	1·8
Other foreign countries	12·8	2·6	4·4	5·9	24·4	10·5	9·8	14·7	19·1	7·7	7·3	9·7
Total Foreign Countries	30·0	42·0	39·0	34·0	62·0	48·0	56·0	57·0	48·0	46·0	49·0	44·0
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

It will be observed that the Empire as a whole has increased its share of the total trade of India by 5 per cent. in the last year under review and that it now accounts for 56 per cent. of India's total trade as compared with 52 per cent. before the war—a most satisfactory showing after the many handicaps and disturbing factors of the past five years.

The recovery made by the United Kingdom has been most remarkable. Her share of the total trade is now 44 per cent., that is 3 per cent. above the pre-war figure. *Her share of India's imports has increased from* 46 *per cent. in* 1918-19, *the lowest proportion touched during the war, to* 61 *per cent. in* 1920-21, *and is now only* 3 *per cent. less than in* 1913-14. In 1920-21, the United Kingdom shipped to India no less than £204,000,000 worth of goods, of which about 95 per cent. represented manufactured articles. In Appendix I, page 235, will be found a summary table showing the principal articles imported from the United Kingdom over a series of years. During the past year cotton yarn, piece goods and other manufactures of cotton accounted for 40 per cent., iron and steel 10 per cent., machinery 8½ per cent., railway rolling stock and plant 6 per cent., and the balance covered a very wide range of manufactured goods. I would refer my readers to the detailed analysis of the import trade which is given in Chapter IV from which they will observe that under almost every heading of trade the United Kingdom recovered her position during the past year. The satisfaction with which one surveys this recovery is, it is true, clouded by the contemplation of the very heavy stocks in this market. Nevertheless, the stocks of foreign competing goods are just as heavy, and the really encouraging feature of the situation is that, for the first time since the war, British shippers have been on equal terms with their new foreign competitors and have recovered their trade to such an extent that they are now within 3 per cent of their pre-war position.

It is somewhat discouraging that the United Kingdom is not able to take a greater proportion of Indian exports of produce and manufactures. During the war, owing to the large supplies of foodstuffs and produce required for the armies in the field, she was able to increase her takings from 24 per cent. in 1913-14 to 30 per cent. in 1919-20, but during the past year the proportion has fallen to 22 per cent., which is lower than the pre-war figure by 2 per cent. It is a great potential source of weakness that the British Isles should only take from India less than one-half the value of goods which she exports to India. Apart from economic laws, there is a growing tendency all over the world for a country to purchase its imports from those other countries which are the most important customers for its own produce (*vide* General Smuts' recent speech in London referring to South Africa). India's most important markets apart from the United Kingdom are normally Germany, the United States, Japan, Italy and France, and there is every likelihood that she will tend to buy more and more from those countries. This question is one which

is assuming importance in recent discussions as to whether India should adopt Imperial Preference. This matter is in abeyance pending the investigations of the Indian Tariff Commission. The argument commonly used, however, is that as the British Empire as a whole only takes 43 per cent. of India's exports and supplies 66 per cent. of the country's imports, India, on balance, would lose more than she would gain by granting preferential rates on Imperial goods at the expense of the foreigner. Furthermore, there would be a considerable risk of retaliation by those foreign countries which might bear heavily on India's export trade. Every effort should be made to stimulate imports of Indian produce and manufactures to the United Kingdom and to retain our valuable entrepôt trade which has—in the past—been of incalculable benefit in stimulating British exports.

Foreign Competition.—Although a study of the analysis of the various import trades in Chapter IV reveals the fact that the United Kingdom has largely regained its pre-war position in the Indian market, there are distinct signs that American and Japanese competitors, having gained a foothold during the war, are likely to remain and German and Belgium competition is steadily growing. The most important factor to-day is the competition from the United States.

American Competition.—American shipments to India advanced from £10,766,000 in 1918-19 to £25,267,000 in 1919-20 and £35,298,000 in the last year under review, the respective shares of the total imports into India being 9·5, 12·1 and 10·5 per cent. The United States is now second only to the United Kingdom, having overtaken Japan in 1919-20.

In Appendix I (B), page 237, will be found a summary table showing the imports from the United States under the principal headings during the past five years as compared with the pre-war year. The principal heading, as might be expected, is motor cars (£6,486,000) followed in order of importance by mineral oils (£5,300,000), iron and steel (£5,199,000), machinery (£4,026,000), hardware (£2,255,000), instruments and apparatus (£1,335,000) and tobacco—mainly cigarettes (£1,089,000).

Although the American merchant houses established in India since the war are suffering severely from the present trade slump in common with their British rivals, they are gradually strengthening their hold. Mention was made in my last report of the position of a few large American houses in India. During the past two years their number has increased. Another prominent steel export organisation has opened branches in the country. The Baldwin Locomotive Works have also opened a permanent office in Calcutta. There are now at least three American firms conducting the commission indent business with the bazaars, while during each cold weather India is full of American travellers and business men studying possibilities. There is no doubt but they have learnt a very severe lesson during the past year. Being the last in the field and, therefore, being forced to give favourable terms in order to attract business, they must have been badly caught by the wholesale repudiation of liabilities on the part of

Indian dealers. American exporters of motor cars were more fortunate, as in most cases they insisted upon irrevocable bank credits in New York and the agents in India were left to face the storm. American machinery of all kinds has now gained a reputation in this market and is being assiduously pushed with method and enterprise. It is, of course, probable that the political spirit of non-co-operation with the Government of the country and the strong anti-British feeling which is being shown in certain quarters may be of advantage to the American manufacturer. This, however, is not likely to be a permanent factor and American competition rests on much firmer bases, namely, those of energy, enterprise and active salesmanship.

Japanese Competition.—Imports from Japan, after expanding at a rapid rate throughout the war, received a set back in 1919-20, but recovered in the last year under review when they reached a total of £26,430,000. Japan now supplies 7·9 per cent. of India's imports, receives 9·5 per cent. of her exports and the Japanese share of the total trade is 8·6 per cent.

The main items of import from Japan in 1920-21 were cotton piece goods (£8,371,000), cotton yarn (£4,899,000), silk manufactures (£2,959,000), cotton hosiery (£1,393,000), matches (£1,296,000), and general hardware (£758,000). The balance of approximately £7,000,000 was spread over a very wide range of articles, particulars of which will be found in Appendix I (C), page 237. In my last report I dealt very fully with the various aspects of Japanese competition and subsequent events have confirmed the statements then made. During the War, owing to purely fortuitous circumstances, the Japanese entered trades in which they could never hope to compete in normal times. I would instance cement, iron and steel, electrical instruments and accessories, cables, paints and tea chests. During the past year when Indian buyers were at last able to revert to their normal sources of supply they have done so, with the result that Japanese shipments of these goods, for the supply of which Japan is not economically well placed, have fallen considerably. On the other hand the shipments of goods in which Japan can compete have steadily advanced and it is now possible to estimate where Japanese competition will be most serious in the future. The most severe rivalry will be met with in cotton yarns and piece goods and an examination of this trade will be found in Chapter IV, page 89 *seq.* In cotton hosiery Japanese makers control the market and supply 73 per cent. of India's imports. Matches, of course, are largely non-competitive and the same remark applies to silk manufactures. In cheap apparel, hardware, glass and earthenware, paper, stationery and the countless articles used in the bazaars, where showy exterior and low price are the main desiderata, Japan is bound to increase her trade. In this business she has largely taken the place of Germany and Austria and competition with British goods is not so severe as our shippers usually supply the higher grades.

Japanese merchants in India have sustained very heavy losses in the recent slump, and several houses have abandoned their

Indian branches. During the war, the Mitsui Bussan Kaisha and the Japan Cotton Trading Company occupied first and second place respectively in the list of piece goods importers in Calcutta. By the year 1920 they had, however, fallen to fourth and fifth place, and the British distributors had regained their position.

German Competition.—The last year's statistics are noteworthy as they record the re-entry of Germany into the Indian market with shipments valued at £4,748,000, of which dyestuffs accounted for £1,203,000, metals £864,000, salt £350,000, hardware £291,000, glass and glassware £203,000, paper £187,000 and silk manufactures £167,000. German shipments are steadily increasing month by month, and are spread over a constantly widening range of products, *vide* Appendix I (D), page 239. I anticipate that when the returns for the current year are published it will be found that the German position in India's import trade will have, to a large extent, been regained.

The principal cause for the revival of German competition is the great advantage afforded by the depreciated mark exchange in the case of those goods for which the raw materials are obtained in Germany. Where Germany has to import her raw products, *e.g.*, in the cotton and woollen textile trades, the exchange benefit is, of course, to some extent neutralised.

German competition is at present being most severely met with in aniline and alizarine dyestuffs, and notwithstanding the footing gained by British makers during the war and the excellent distributing organisation which they have built up (which is quite as efficient as the pre-war German organisation) they are being undersold by the imported German article, and—probably largely owing to the exchange—the difference in price in most cases is as much as 40 to 50 per cent. German imports of dyes during recent months have exceeded the British shipments, and it is difficult to find any remedy which our makers can employ in dealing with this difficult situation. The same state of affairs is found in the machinery trade. Many instances have recently been brought to my notice where orders for rice mills, sugar plants, &c., have been placed in Germany owing to a 50 per cent. lower quotation than was obtainable from British makers. Buyers in India state that they also obtain earlier deliveries and greater consideration from the German manufacturers. In purchasing machinery and plant from Germany there is the great handicap that it cannot be erected by German mechanics in the employ of the manufacturer owing to the Government of India Act excluding German subjects from residing in India except under special licence, for five years after the conclusion of peace. Whether the Government of India would be prepared to grant licences in these cases is a moot point, but it should be remembered that anti-German feeling does not exist among the Indian community. On the contrary, there is every disposition to buy German goods if they are cheap and suitable. In normal times Germany is one of India's best customers and takes very large quantities of produce such as hides, cotton, oilseeds, jute, &c., &c. It is only to be expected that, in India, Germany will find one of the most promising fields for trade expansion in the near future. It is more than probable that the very strong political feeling which is prevalent

among all classes of the Indian community will contribute materially to this result.

Belgian Competition.—The remarkable recovery of industrial Belgium is clearly reflected in the imports into India for last year which reached a total value of £5,326,000, and were almost double the value of the pre-war shipments. In Appendix I (E), page 240, will be found a summary table showing the imports under each heading, from which it will be observed that nearly 50 per cent. consisted of iron and steel in various forms. It is exceedingly likely that the bulk of the dyestuffs and a certain proportion of the paper, glassware and textiles were of German origin shipped via Antwerp. Belgium is now underselling British steel makers in almost all kinds of constructional steel, and is regaining her Indian market for window glass. Her shipments are steadily increasing each month, and the figures for 1921-22 will probably show a very considerable further advance. The competition is perfectly straightforward, and can only be met by quoting as low prices and as early deliveries.

Political Events in India during the Period.—The past two years have been momentous ones in the history of political institutions in India. They have witnessed the translation into actual fact of the Constitutional Reforms commonly known as the Montagu-Chelmsford Scheme and the opening of the first National Legislature with a non-official majority in both Houses. It is impossible to read the reports of the debates of the first session of the Council of State and the Legislative Assembly without being impressed by the moderate tone of the speeches and the spirit of responsibility with which the majority of the members were imbued. This augurs well for the future. At the same time there are at large in the country very many disturbing elements which cannot be ignored. The movement of non-co-operation with Government led by Mr. Gandhi still continues and passes from one phase to another, being directed at the moment towards a boycott of imported cloth. Racial feeling is being fanned and is more apparent to-day than ever before. Although it is impossible to prove it, one gains the impression that political feeling is entering into every branch of trade and economic life as the " swadeshi " movement grows in strength. All these movements are likely to have some effect on British trade with India and deserve careful study by those British manufacturers and exporters who have any stake in the country. It is with a view to stimulating interest in and study of Indian political promblems by British traders that I venture to touch on the thorny question in this Report.

The Indian Tariff.—Great surprise was evinced in certain trade circles in the United Kingdom when the Government of India in March last, decided to raise the general import tariff from 7½ to 11 per cent. This increase was inevitable in view of the urgent need of raising revenue. What most people at home realised for the first time with something of a shock was the pregnant fact that India is now a constitutionally-governed country and is mistress in her own house, even in regard to

fiscal matters. The watchword among Indian politicians, industrialists and business men to-day is protection for Indian industries and inasmuch as the United Kingdom supplies 61 per cent. of India's imports it is fairly obvious against whom the protection would be levied. This fact cannot be blinked and it is as well that it should be widely known in the United Kingdom. I would emphasize with all the strength I have that British firms must re-orientate their outlook and policy with regard to India, bearing in mind that it is practically impossible at the present time to carry through any commercial or financial legislation without the assent of the Legislative Assembly, which has an unofficial majority.

The Fiscal Tariff Commission.—The Government of India have referred the investigation of the fiscal policy best suited to India to a Commission which will tour India this coming cold weather. (*See also* p. 99.) The terms of reference are :—

> "*To examine, with reference to all the interests concerned, the tariff policy of the Government of India, including the question of the desirability of adopting the principle of Imperial preference, and to make recommendations.*".

The following have agreed to serve on the Commission :— President, the Honourable Sir Ibrahim Rahimtulla, Kt., C.I.E.; Vice-President, J. M. Keynes, Esquire, M.A., C.B., Fellow of King's College, Cambridge. Members : T. V. Seshagiri Ayyar, Esquire, M.L.A.; Ghaheshyamdas Birla, Esquire, M.L.C., of Messrs. Birla Brothers, Ltd., Calcutta; J. C. Coyajee, Esquire, B.A., LL.B., Professor of Economics, Presidency College, Calcutta; the Honourable Sir Manekji Byramji Dadabhoy, Kt., C.I.E.; Jamnadas Dwarkadas, Esquire, M.L.A.; the Honourable Sir Edgar Holberton, Kt., C.B.E.; R. A. Mant, Esquire, C.S.I., Indian Civil Service; Narottam Morarji, Esquire, of Messrs. Morarji Goculdas and Company, Bombay; C. W. Rhodes, Esquire, C.B.E., M.L.A., of Messrs. Hoare Miller and Company, Calcutta; Sir M. De. P. Webb, Kt., C.I.E., C.B.E. The Vice-President will arrive in India about the beginning of February.

Mr. H. G. Haig, Indian Civil Service, has been appointed Secretary to the Commission, and Mr. E. F. Rogers, officer on special duty in this department, will be Assistant Secretary.

The Commission will assemble at Bombay in the first half of November, and will visit the more important commercial and industrial centres of India for the purpose of taking oral evidence, completing this part of its work probably early in March, 1922; it will submit its report to the Government of India as soon thereafter as possible.

Various associations and individuals will be invited, either directly by the Commission or through Local Governments, to forward their views in writing; other associations or individuals wishing to represent their views should apply to the Secretary, Indian Fiscal Commission, Simla, who

will furnish them with a list of questions to which answers are required. The Commission will decide, after a perusal of the written replies, which witnesses will be examined orally.

I would suggest that United Kingdom Trade Associations and Chambers of Commerce who might wish to place their point of view before the Commission should be preparing their case and arranging for it to be presented.

Methods of Representation.—I dealt with this vital subject at such length in my last Report—Cmd. 442 of 1919—that I only propose to touch briefly on it on this occasion. The analysis of the position and the recommendations then made still hold good. The events of the last two years have more than confirmed my contention that British exporters to India must be represented by an active and competent organisation in the country itself. If the trade is sufficiently large and lucrative to warrant the expense, then—as in the case of the prominent engineering firms—they cannot do better than open their own branches with competent engineers and erecting staffs. In the majority of cases, however, mercantile agents should be appointed and, wherever practicable, the exporter might with advantage attach one of his own employees to the agent in order to assist the latter with his technical knowledge and to carry out the pioneer work. In the case of manufacturers conducting a small business with India, they would probably find it to be advantageous to employ the services of one of the many travelling representatives with long experience of this market.

CHAPTER II.

THE DEVELOPMENTS IN ECONOMIC RESEARCH AND IMPROVEMENT OF THE NATURAL RESOURCES OF THE COUNTRY.

Agricultural Development.

This is obviously the most important of all questions in a country like India, of whose population no less than 226 million people or 72¼ per cent. are employed in agriculture. For the material in this section I am greatly indebted to Mr. S. Milligan, Agricultural Adviser to the Government of India, and the following particulars are mainly a series of verbatim extracts from the Annual Review of Agricultural Operations in India, 1919-20, published by his Department. Details with regard to the development in 1920-21 are not yet available :—

Agricultural Conditions during the year 1919-20.—Indian agriculture is entirely dependent upon a plentiful supply of rain each year and consequently the prosperity or otherwise of the people of India varies in a direct ratio to the abundance or otherwise of the monsoon. During the year 1919 the monsoon rains began at about the normal time but ceased in Northern India

somewhat earlier than usual. During the vital period from June to September, however, the rainfall was rather above normal and on the whole the season was a favourable one for the agriculturist except in Burma, where almost every crop was disappointing. The total yield was much higher in the case of all crops except tea and indigo, while the average outturn per acre of all crops, without exception, was much above the average of the previous ten years. The result of these favourable conditions was that employment in the country districts was good, wages were relatively high and the earnings of the agriculturist were such that he was able to meet the increase in the cost of the necessities of life other than food, such as piece goods. The supply of fodder was plentiful, but the year was not suitable for livestock and the mortality among cattle was higher than usual.

Agricultural Conditions during the year 1920-21.—The season 1920-21 (covering the period of growth of the Kharif or rain crops of 1920 and the rabi or winter crops of 1920-21) has not been so favourable as its predecessor, mainly owing to the early cessation of the monsoon over the greater part of India. Rainfall in September is important both for finishing off the Kharif crop and for the determination of the area under rabi crops. The outturn of the latter may be materially improved by winter rainfall but this, too, turned out disappointingly low. The general result therefore was a somewhat decreased area under Kharif crops with a reduced outturn and a marked reduction in both area and outturn of the rabi crops.

Economic Work on Crops.—The Agricultural Department has continued the excellent work of past years, the results of which are becoming increasingly apparent in the great extension of the area under improved varieties of crops and in an extended use of those simple cultural implements which were introduced at the Government farms before the war. The following brief notes under the heading of the principal crops will give a general idea of the economic work done by the staff of the Agricultural Research Institute at Pusa and the increasing number of agricultural officers both Imperial and provincial :—

Rice.—The most important crop in India. The output in 1919-20 was 33,551,000 tons of cleaned rice, as compared with 24,201,000 tons in 1918-19, and the estimated yield per acre was 960 lbs., or 256 lbs. more than that of the previous year, and 42 lbs. above the last decennial average. The improvement of this crop still forms one of the main items of work of the Agricultural Department. In Bengal considerable progress has already been achieved by the introduction of several heavy-yielding pure races of transplanted paddy and by attempting to combine, by crossing, early maturity and heavy yield in one plant. In Madras excellent results have been obtained by the isolation of high yielding strains. In Burma, the demand for the improved selections introduced by the Department is increasing as they have been found to yield considerably more per acre than the best local varieties.

Wheat.—This is the second most important crop grown in India. The area in 1919-20 was 29,976,000 acres and the estimated total yield from 7,508,000 tons to 10,092,000 tons. Both production and outturn per acre were higher than in the preceding year. The work of the Department in connection with wheat consists not only in the evolution trial and distribution of strains of superior yielding power, quality of grain, strength of straw and resistance to rust, but also in demonstrating the response of the crop to better cultivation. It is noteworthy that several of these improved Pusa wheats are winning prizes in foreign countries and establishing themselves there. In the Punjab, a record yield of nearly 57 bushels per acre was obtained from one of these improved strains.

Sugar cane.—The estimated total area under sugar cane in 1919-20 was 2,647,000 acres, and the estimated yield 2,992,000 tons. The average yield of *gur* (unrefined sugar) was 2,531 lbs. per acre, as compared with 1,903 lbs. in 1918-19 and 2,310 lbs., the average of the preceding ten years. Before the war India imported annually some 900,000 tons of sugar. In 1919-20 the imports were 408,700 tons at very high prices. In spite of this reduction in imports and high prices, the area under sugar cane in India did not expand, owing probably to the lack of capital to obtain extra labour and to provide manure and irrigation. The Indian Sugar Committee recently investigated the whole question very thoroughly and the Indian Sugar Corporation has recently been floated in India with a capital of five crores of rupees in order to extend the cultivation on a large commercial scale. In the meantime, the Government of India have established a sugar bureau at Pusa with the object of furnishing advice to cultivators, manufacturers and others. The bureau is in touch with nearly all the sugar experimental stations in the world and also with the principal sugar machinery manufacturers in the United Kingdom and United States of America, and has collected a mass of valuable information with regard to the industry. British makers of sugar plant should place themselves in touch with the Secretary, Indian Sugar Bureau, Pusa, Bihar.

Cotton.—The importance to India of the cotton crop is self-evident. In 1919-20 the area under cotton, principally in the Central Provinces, Hyderabad State, Madras, Punjab, United Provinces and Central India States was 23,070,000 acres, and the estimated yield amounted to 5,845,000 bales of 400 lbs. each. The outturn per acre was 101 lbs. as compared with 76 lbs.—the average of the preceding ten years. The economic importance of the crop may partly be measured by the export of Rs.58.65 lakhs of raw cotton and Rs.8.73 lakhs of cotton manufactures, although its principal importance is that it is the basis on which the great and expanding cotton manufacturing industry of India is based.

The work of the Agricultural Department has always been largely concerned with cotton, and has followed similar lines as

with other crops, viz., plant-breeding and agricultural improvement, complicated however to a much greater degree by considerations regarding the quality of the final product. Commercial and industrial considerations are most important, the success of a selected variety often hinging on such questions as obtaining a sufficient premium for quality. In the Punjab, for example, acclimatised American types give a yield approximate to that of *deshi*, the balance being turned in their favour by a comparatively small premium for quality. In the Central Provinces, on the other hand, owing to less favourable conditions, the margin between short and long stapled cotton has not yet sufficiently widened to balance the difference in yield of ginned cotton, which is in general much higher in the case of the short stapled *deshi* varieties. In the Punjab, the American cotton crop, composed mainly of type 4F. in the canal colonies, is estimated to have reached in 1919-20 an area of about 525,000 acres, but it suffered severely owing to the extreme dryness of the season in August and September.

Jute.—The area under jute in 1919 was 2,839,000 acres and the total yield rose from 6,956,000 bales to 8,482,000 bales of 400 lbs. each, which showed an increase of 22 per cent. There was also an increase in the estimated outturn per acre of 82 lbs. The value of raw and manufactured jute exported during the year was Rs.74.72 lakhs. At present the world's supply of jute fibre is obtained almost entirely from Bengal, Bihar and Assam. Two main species of jute are cultivated, viz.: *Corchorus Capsularis* and *C. olitorius*, but it is from the former that the great bulk of the crop is derived. There are numerous varieties of both species, and one of the most successful pieces of work of the Bengal Agricultural Department has consisted in the isolation of superior yielding strains from the common mixtures found in the field. An examination of the manurial requirements of jute has been made with valuable results and a bacteriological investigation into the retting process in jute and other similar fibres is in progress.

Flax.—Exhaustive experiments have shown that flax can be profitably cultivated as a cold weather crop in Bihar without irrigation. Later experiments in Northern Bengal and Assam have given similar indications. Trials of the crop under irrigation at Cawnpore have given yields of fibre more nearly approaching those obtained in Europe than any yet obtained in India. The Cawnpore results have been demonstrated to such good purpose that cultivators in the neighbourhood of the Government farm are now willing to grow the crop, and about two tons of seed were distributed last season. Cultivators in Northern Bengal, where the conditions are highly suitable for flax, would also grow the crop if there were a good market for the straw, but the extraction of the fibre from the straw presents the real difficulty. If really good quality is aimed at, fibre extraction is a more delicate and elaborate operation than the Indian cultivator is used to. Moreover, it ordinarily involves a capital outlay in machinery which he could not afford. Capital in some form or other thus seems to

be required if this opportunity of establishing a profitable flax-growing industry is to be taken advantage of.

Experimental evidence shows that good crops of flax can be produced in India and there is little doubt that they can still be handled more cheaply in India than elsewhere. On the whole, therefore, there would seem to be justification for the belief that flax holds considerable possibilities of profit for the Indian cultivator, provided the problem of extracting the fibre can be satisfactorily surmounted.

Indigo.—The area under this crop fell from 292,000 acres in 1918-19 to 246,500 acres in 1919-20 and the estimated total yield of dye from 48,600 cwt. to 42,600 cwt. The quantity exported amounted to 32,700 cwt. The average yield of dye per acre showed a slight increase. During the year, an organization, styled the Indian Indigo Co-operative Association was established in Calcutta in order to promote by co-operative methods the sale of indigo and to assist further research and propaganda.

Oil Seeds.—The area under the various oil-seeds—linseed, rape, mustard, sesamum and groundnut—rose from 11,873,000 acres in 1918-19 to 14,835,000 acres in 1919-20, and the yield from 1,907,000 tons to 2,887,300 tons. The total quantity of oil-seeds exported during the year was 825,000 tons, valued at Rs.26.27 lakhs. In addition to this, the exports of copra amounted to 10,600 tons is against 450 tons in 1918-19.

India is one of the largest of the world's sources of supply of oil-seeds. The output of the raw product was until recently far short of the world's demands, and the high prices acted as an incentive to increased production of the various kinds. The work of the Agricultural Department is mainly in selection and varietal tests.

Tea.—The total area under tea was reported to be 691,800 acres and the total production of manufactured tea was reported to be 377,055,600 lbs. The quantity of tea exported in 1919 was 379 million pounds and surpassed all previous records, the total value of the exports being Rs.20.56 lakhs. During the year 1920-21, however, the industry has been most depressed. European and American markets were glutted and prices fell until in many cases, not only did the producers' margin of profit disappear, but he was faced with a heavy loss. The latest reports from the London market are slightly more encouraging, but it would appear to be some time before the industry regains its normal prosperity. In 1919, the Indian Tea Association continued to maintain a scientific department for the investigation of all problems connected with tea, with the help of the usual grant-in-aid from Government. A great deal of useful work was done, notably the inoculation of tea bushes affected by mosquito blight by potash salts. In Southern India, the Agricultural Department carried out a good deal of useful work in combating the root diseases of the tea bush.

Coffee.—There are about 223,000 acres of coffee under cultivation in Southern India, about 74 per cent. of which are in Mysore and Coorg, where the plantations are mainly in the hands of

Indians. In 1919-20 crops were good and prices phenomenally high. The work in Coorg in introducing coffee hybrids proceeded satisfactorily. Seed of the new types introduced is on the market and is in great demand. It is expected that, in a few years' time, the new types will produce a marked improvement on the yield of estates. Manuring problems are also receiving attention, while, in Mysore, experiments on the treatment of coffee on estates affected by the coffee borer are in progress.

Rubber.—A number of experiments are being conducted on the estates in Southern India. The most important of these are :—

(*a*) the study of manurial systems (lime, green dressings, phosphates, etc.);
(*b*) the study of green dressings for both old and young rubber;
(*c*) a series of manurial experiments;
(*d*) a spacing experiment;
(*e*) the control of *Phytophthora Meadii*, a serious disease of rubber, by the removal of the fruits and dead branches.

The study of a mysterious disease known as "brown bast," the incidence of which is as high as 40 per cent. of trees on some estates, occupied a prominent position in the year's programme. A number of experiments designed to control the disease have been tried without attaining any considerable success.

Owing to the glut in the rubber markets of the world, the Rubber Growers' Association have recently recommended a reduction of output by 25 per cent.

A very great deal of work was also carried out by the Agricultural Department in connection with fruit trees, fodder crops and grasses, and miscellaneous crops, such as Juar (Sorghum), ragi, potatoes, beans and peas, gram and poppies.

Research and Investigation.—A very great amount of valuable reasearch work has been done and is still being carried on. Most of the investigations are still in progress and have not yet reached a definite stage at which they can be reported on in a complete and interesting manner. The principal subjects in which detailed investigations are being made are :—

(1) Soils. Survey of soils, soil biology, nitrogen fixation, soil moisture, sullage investigations.
(2) Fertilizers.
(3) Disease of crops.
(4) Insect pests.
(5) Useful insects, such as bees, lac and silkworms.
(6) Miscellaneous, including a study of the activities of various parasites.

Agricultural Engineering.—This is perhaps the most interesting development of all from the point of view of the British supplier of machinery and plant, such as steam, oil and gas engines, pumps, rice hullers, threshers, tractors, ploughs, etc., and it may be of interest to quote the relevant passages from the Review of Agricultural Operations in India, 1919-20, which deal with the development in individual provinces.

The early work of the Agricultural Department showed that, apart from improvement of crop yields by plant selection and manuring, much could be done by more efficient implements. The establishment of engineering sections under technical experts may be regarded as a very distinct advance which is bound eventually to lead to an all-round improvement in the agricultural efficiency of the country. Shortage of staff has militated against progress in several provinces. Bombay, Madras, the United Provinces and the Punjab were in 1919-20 the only provinces whose provincial cadres included permanent appointments of agricultural engineers. Two posts of agricultural engineers outside the departmental cadres have been sanctioned for Burma and Bihar and Orissa, while the former province has employed temporarily an engineer lent by the Public Works Department. The principal developments in the provinces were as follows :—

Bombay.—127 successful bores for wells were made during the year, and there is a considerable demand for more. Experiments with power plants, driving pumps, cane crushers, etc., gave valuable experience and the Agricultural Engineer designed and erected many such plants for landowners.

Madras.—The Agricultural Engineer completed the erection of 18 pumping plants and supervised 144 ryots' pumping installations maintained by the Department. Bore holes were put down to the number of 402 with an average depth of nearly 390 feet. Of these, 290 struck springs, two of which were artesian.

The Government sugar cane-crushing and jaggery-making factory at Pallapalaiyam, near Coimbatore, was continued under the Agricultural Department. Notwithstanding the higher prices charged during the year for cane-crushing and evaporation of the juice, the general opinion amongst the ryots was that it paid them better to employ the Government factory than to have the work done with ordinary country mills and country pans.

United Provinces.—There was a widespread demand for machinery of all sorts, viz., engines, pumps, rice hullers, threshers, tractors, etc., which, on account of shortage of stock, could not be met except to a small extent. At the close of the year six tube wells with engines and pumps had been completed and set to work, whilst eight more were in the course of construction. Trial borings led to 130 successful wells out of 206 borings made, while the supply of 377 wells, out of 524 operated upon, was increased. The demand for power sugar mills is particularly great. The following quotation from the report of the Agricultural Engineer on power cane-crushing mills is significant :—

> "I erected a crushing mill and oil engine for a small Zemindar in Gorakhpur District last season. The mill crushes 27 maunds (a ton) per hour. The man, after one season's working, has now come to me for a mill three times the size for next season's work. He dealt last season with at least one lakh of rupees worth of produce with the plant I erected, and his profits must be in the neighbourhood of

Rs.30,000 for the season's work. The total cost of the plant, engine and mill, including erecting charges, was only Rs.5,000. He will be working next season with a much bigger plant, and, in consequence, his profits will be much bigger."

Punjab.—The number of borings during the year showed a slight increase as compared with last year's figures, viz., 360 as compared with 349. The percentage of successes rose from 77·6 to 84·3—a very fine performance on the part of the staff. Work on tube wells is in progress at Jallalabad, Lyallpur, Muzaffargarh, Lahore and Bahawalpur. The Agricultural Engineer is also engaged in designing a power boring machine to suit the Punjab soils and a bhusa-making plant. The latter, if successful, would undoubtedly enable the department to make a new advance in tackling the wheat threshing problem in North-West India, which has never yet been satisfactorily solved.

Burma.—Numerous problems await solution, and requisitions for advice on implements, machinery, land improvement schemes, etc., are increasing. In comparative tests between iron and wooden sugar cane-crushing mills, the Hathi iron mill, the price of which is moderate, gave favourable results as compared with existing wooden types, and it is stated that it would give still better results with larger rollers. As the iron mill has driven out the wooden crusher in most parts of India through sheer efficiency, the problem really resolves itself into test of the efficiency of the different makes of iron mills, rather than between wooden and iron types. Tests with different types of threshers were also carried out.

Bihar and Orissa.—The number of borings to increase the supply of wells was 60. The majority gave great satisfaction. The suitability of strainer tube wells to Bihar conditions requires further study.

Central Provinces.—An Agricultural Engineer has been recently appointed.

Mysore.—A new design of plough was brought out during the year. It is now under trial by 40 leading agriculturists at different localities. Much work was done in altering and testing jaggery-boiling furnaces, and a saving amounting to about 30 per cent. in fuel was effected.

Baroda State.—40 successful borings to increase the supply of wells were made during the year. The rock-boring machine recently introduced was particularly useful. The use of power in the boring operations was found advantageous on account of scarcity of labour. The State advanced Rs.20,000 to agriculturists for setting up oil engines and pumps and, in addition, a sum of Rs.10,000 to enterprising cultivators for the purchase of tractors.

The introduction of agricultural motor tractors in considerable numbers during the year would seem to indicate that the field for their use may not be so limited as has hitherto been supposed. The need for supplementing the cattle power of the country has

been felt for some years back, and this has been brought prominently before those who have been able to grasp the significance of improved tillage in the scheme of general agricultural improvement. The development of such crops as sugar cane depends on more intensive tillage just as much as on increased supplies of manure and water.

Further, the possibilities of the alleviation of some of the aftermaths of famine years are attractive to contemplate. It is thus not a matter of surprise that so much interest has been taken in India in the development of the agricultural motor tractor. It must be acknowledged, however, that the problem as applied to India is by no means solved, and the disappointment must be the inevitable result of too sanguine a view. The case of the agricultural tractor is not so simple as it looks, and it is quite unsafe to base opinions as to the suitability of this form of power from the analogy of the motor car. An agricultural tractor is called upon to do a full day's work for long stretches on end. There is no such thing as easing up as in a motor car and, except at the turnings, the engine is called upon to work at high pressure all the time. In these circumstances, especially in a tropical climate, rapid deterioration of the wearing parts is to be expected and the bill for lubricating oil is bound to be heavy. If these facts are borne in mind and too much is not expected of the motor tractor in India until defects have been remedied through experience of local conditions, all will be well. On the other hand, much will be lost through either an over-sanguine view or through a hasty judgment demanding impossibilities from a form of power, which, as far as its agricultural application is concerned, is still in its infancy.

British manufacturers of agricultural plant likely to be suitable should instruct their representatives in India to place themselves in touch with the Director of the Agricultural Research Institute, Pusa, through whom names and particulars of the provincial agricultural engineers could be obtained.

Agricultural Education.—Besides the Agricultural Research Institute and College at Pusa, under the Imperial Government which deals with post-graduate courses, there are agricultural colleges in the Provinces of Bombay, Madras, the United Provinces, the Punjab, the Central Provinces and Bihar and Orissa, and it is proposed shortly to open such institutions in Bengal and Burma. In addition there are a few agricultural middle schools and a number of vernacular agricultural schools throughout the country. Advantage is being taken of these facilities by an increasing number of students each year.

The Co-operative Movement.—The development of agricultural credit societies has continued to make steady progress. Societies have been organised for joint sale of agricultural produce, for joint purchase and sale of articles for the improvement of agriculture such as manures and implements, and for such useful purposes as irrigation, the consolidation of holdings, etc. The work of the

societies has spread into many channels bringing practical and visible benefits not only to their members but also to the surrounding localities through the opening of dispensaries and schools, the introduction of improved methods of cultivation, of new crop, etc. However great in the aggregate, the percentage of the enormous agricultural population affected is of necessity still small. This is attributed to want of education among the people, and the spread of primary education is considered to be an essential step towards the successful inculcation of co-operative principles. Many co-operators are, however, keenly alive to the situation and are strenuously trying to spread education through organization of night school societies, etc.

The year's progress in co-operation may, on the whole, be considered satisfactory. The policy of the steady pruning of hopeless societies and the careful scrutiny of all new applications for registration has been rigidly followed by all provinces. Notwithstanding this, the number of agricultural credit societies has considerably risen, and there has been a remarkable growth of reserve funds. While this may perhaps be considered as the best proof of the success in the year's transactions, it must be remembered that the financial prosperity of the movement largely depends on favourable agricultural years. The beneficial influence of co-operation over members of societies is also reported to be bearing fruit. A sense of solidarity is being gradually built up and individual members are imbibing the spirit of self-help and habits of thrift. Cases of misappropriation of the societies' money by their office-bearers are not infrequent, but the evil appears to be lessening. In many places the cheap credit afforded by the societies has compelled the local moneylenders to lower their rates of interest. Closer relations between the Agricultural and Co-operative Departments are, however, desirable. The organising and development of societies for the purchase of implement, seeds, etc., require the co-operation of both departments.

Co-operative Dairies have been successful in Bengal, where they supplied, on an average, 3,000 to 4,000 lbs. of milk per day to Calcutta. In the Central Provinces also some progress has been made. Elsewhere in India they have so far not been a success.

Cattle Insurance.—The difficult work of introducing cattle insurance is making steady progress in the Punjab, where the number of insurance societies has increased from 8 to 22. In Burma, the central re-insurance society is now considered to be strong enough to stand alone, and the Government guarantee has not been renewed. Outside Burma and the Punjab there is practically no progress in cattle insurance.

Live Stock.—The Civil Veterinary Department continued to do useful work during the year. The number of head of cattle in India is estimated to exceed 145,600,000, and it will be realised that there is enormous scope for further efforts. During the year 1919-20, rinderpest in a virulent form prevailed in many parts of the country and was mainly responsible for the rise in the mortality under contagious diseases, the reported numbers of which rose from 263,372 in the previous year to 337,396 in the

year under review. The annual loss that the Indian cultivator suffers from preventible diseases of cattle amounts in the aggregate to enormous sums. These losses include not only the market value of the cattle which succumb to disease but include the set-back to production, growth and vitality, as well as the loss and inconvenience incurred in field operations. In India, as in other countries, where the mainstay of the farmer is his live stock, the necessity for a properly organised veterinary department is one of the first considerations. It cannot be hoped, however, that the present annual expenditure of 35 lakhs on the department in India and Burma, amounting to less than one-half anna per head of bovine population will go far to provide an adequate veterinary organisation.

Cattle and Sheep Breeding.—Efforts are being made by selection to improve the breed of cattle for draught purposes. These are being carried out by the Veterinary Department. At the same time the Agricultural Department is engaged in breeding higher milk-yielding cows. It seems only reasonable to suppose that, after milk pedigree has been fully established on a sufficiently large scale in India, the operations will be merged into a joint effort to combine the qualities of milk and draught in the same breed.

As regards sheep breeding, the efforts which have been made in the United Provinces, the Punjab and the North-West Frontier Province continue to yield increasingly promising results. The main line of experiment consists in crossing the Indian ewe with the Australian merino. The half-bred does not show much improvement in carcase, but in quality of fleece the half-bred is markedly superior in staple, strength and softness. The yield is greater in quantity and its market value is three to four times that of country wool. The three-quarter-breds, *i.e.*, the progeny of the half-bred ewes and the Australian merino, show a still further improvement. The wool is longer in staple, finer and softer. It has a decided crimp, but it still contains a certain amount of kemp. In the latest cross of lambs bred from the three-quarter-bred ewes by a merino, still further improvement in the quality and quantity of the wool has been achieved, and it is hoped that, by mating these graded ewes with similarly graded rams, the improvement will remain fixed. The fleeces from the 1919-20 clip fetched as much as Rs.1–12–0 per pound. The wool of the cross-breds on the Hissar farm in the Punjab was sold to the Cawnpore Woollen Mills and realised up to Rs. 1–4–0 per pound.

Other activities of the Department include the training of students in veterinary science and a certain amount of veterinary research work, the greater part of which is carried out at the Imperial Bacteriological Laboratory, Muktesar. For fuller information with regard to the work of the Indian Department of Agriculture, I would refer my readers to the numerous publications of the Department, which can be obtained from Parliamentary booksellers.

The Production of Minerals.

As the Annual Report of the Geological Survey of India for 1920 has not yet been issued, the following information is drawn partly from Sir Henry Hayden's report for 1919, but principally from Dr. Pascoe's survey of the mineral production of India during 1919, from which the following particulars are mainly verbatim extracts.

Total Value of Minerals Produced.—In Appendix II (A), page 241, will be found a comprehensive table showing the total value of minerals for which returns of production are available for the years 1918 and 1919. From this table it will be observed that there has been an apparent increase of over £6,000,000, or 38·39 per cent., in the value of the total production over that of 1918. These figures, however, require some explanation, otherwise they would be misleading. In some cases, although the output has increased in quantity, it has decreased in value, largely owing to the fall in the market prices of ores and metals which followed the cessation of the war. Moreover, the conversions from rupees into sterling in 1919 have been made at the rate of Rs.10=£1 (the actual average value of the rupee during that year was Rs.11.514=£1), while the values for 1918 have been calculated at the rate of Rs.15=£1 (the actual average value of the rupee during that year being Rs.13.56=£1).

It may be of value and interest to consider the production of the principal minerals in turn and to give somewhat fuller particulars with regard to each.

Coal.—In 1919, there was an increase of about two million tons, or over 9 per cent., in the output of coal.

In Appendix II (B), page 242, will be found tables giving the output and the percentage of the total in each of the Indian coalfields. The average price per ton of coal extracted from the mines in each province during 1919 was as follows :—

	Rs.	as.	p.
Bengal	5	0	1
Bihar and Orissa	4	1	2
Central Provinces	5	7	0
Central India	3	9	7

The average number of persons employed daily in the coalfields increased from 191,325 to 203,752. The average annual output per person employed was 111·05 tons. The total number of fatal accidents was 287, corresponding to a death rate of 1·41 per thousand persons employed.

Present Coal Position in India.—The present coal position in India is extremely serious. Owing to a variety of reasons, the principal of which are the reduced output by the miners and the shortage of wagons, the raisings of coal were considerably reduced in 1920, and the present supplies are short of the requirements of the country, with the result that industries are being seriously affected. Steps have been taken by Government to curtail the exports of coal from India, and proposals are now being made by the Government of India with a view to the

creation of an organisation for the conservation of the coal supplies of the country and the prevention of waste.

Gold.—There was a decrease amounting to 28,858 oz. in the output of gold, which amounted to 507,260 oz. All provinces, with the exception of the Punjab, shared in this decrease, which was borne chiefly by the Kolar field in Mysore, where the output fell by 19,164 oz. Ninety-five per cent. of the total production of gold came from Mysore, the only other important fields being in Hyderabad and Madras. The total number of persons employed in the industry was 26,454.

Petroleum.—In Appendix II (C), page 243, is given a return showing the quantity and value of petroleum produced in India during 1918 and 1919. This shows an increase of about 19 million gallons, the total production being 305,651,816 gallons. The chief increases were over 32½ million gallons from the Singu field, over ½ million from the Upper Chindwin field, both in Burma, and one million from the Badarpur field in Assam. The Yenangyaung field was responsible for the principal decrease in production, its output having fallen by about 13⅓ million gallons. There were also reductions in the outputs of Yenangyat, Minbu, Digboi and Attock. Notwithstanding the fact that India produced within her borders nearly 306 million gallons of petroleum, the imports of mineral oils were enormous and aggregated, in 1918-19, over 60 million gallons, and in 1919-20 over 144 million gallons. The exports of paraffin wax from India continued to expand, the total quantities shipped being 532,479 cwts., valued at £1,216,252. The principal destinations were the United Kingdom, Japan and Australia.

Salt.—There was an increase of two million tons in the output of salt in India during 1919, the total production being 1,891,138 tons, valued at £1,823,522. The principal producing areas are Bombay, Madras, Northern India and Aden. At the same time, 481,700 tons were imported, principally from Egypt and Aden, to satisfy the demands of Bengal and Burma.

Iron.—There was a considerable increase in the output of iron ore. The total production in 1919 amounted to 563,750 tons, valued at £45,887. The Tata Iron and Steel Company, Ltd., produced 232,368 tons of pig iron, 134,061·2 tons of steel, including rails, and 2,650 tons of ferro-manganese; while the Bengal Iron and Steel Company produced 84,965 tons of pig iron, 4,732 tons of ferro-manganese and 29,635 tons of cast iron castings. In the Central Provinces there was a reduction of over 31 per cent. in the number of indigenous furnaces which fell from 232 in 1918 to 159 in the year under review.

Manganese.—The output of manganese ore amounted to 538,000 tons in the year under review, and of this 370,000 tons, valued at £697,732, were exported mainly to the United Kingdom. More than 80 per cent. of the production came from the Central Provinces with smaller quantities from Mysore, Orissa and the Bombay Presidency.

Mica.—The quantity of mica produced was 45,783 cwts., valued at £219,842, and showed a decrease of nearly 9,000 cwts.

on the figures for 1918. These figures, however, are not very reliable and cannot be regarded as indicating a relaxation of the urgent demand for this mineral throughout the world.* As usual, the exports exceeded the recorded production and amounted to 59,098 cwts., valued at £863,448. Bihar and Orissa produced 73 per cent. of the total, mainly in the Kodarma district, while lesser quantities were obtained from Madras and Rajputana.

Monazite.—There was a slight decrease in the output of monazite in Travancore, which fell from 2,117 tons, valued at £58,819, in 1918 to 2,024 tons, valued at £60,712, in the year under review.

Copper.—The output of copper in Singhbum fell from 20,108 tons in 1917 to only 3,619 tons in 1918. The industry more than recovered itself, however, in 1919, when 32,750 tons, valued at over £52,000, were obtained. Smelting operations were begun at the Rakha Mines during the year 1918 and resulted in the production of 980¼ tons of refined copper in the year 1919.

Lead and Silver.—In Appendix II (D), page 244, will be found a table giving the production of lead and silver ore during 1918 and 1919. There was an increase of some 6,600 tons in the amount of ore and slag produced at the Bawdwin Mines; the amount of metal extracted was also greater than that recorded in the year 1918, the total output being 19,090 tons, valued at Rs.6,686,416, as against 18,995 tons, valued at Rs.6,751,842, in the preceding year. The quantity of silver extracted rose from 1,970,614 ozs., valued at Rs.4,433,881, in 1918 to 2,164,854 ozs., valued at Rs.4,870,919, in the year under review. Apart from the output of silver at the Bawdwin Mines, the only other source was the Anantapur Gold Mine in Madras, which produced 753 ozs. The total Indian production of silver was therefore 2,165,607 ozs., valued at £487,246.

Tin.—The output of tin ore rose from 15,607 cwts. in 1918 to 26,891 cwts. in 1919. The whole of the ore was produced in Lower Burma, nearly 39 per cent. of it in Tavoy, and 39 per cent. in the Southern Shan States. Mergui also produced 2,700 cwts. of block tin. The imports of tin rose from 24,596 cwts. in 1918 to 41,860 cwts. in the year under review. By far the greater part of the tin imported came from the Straits Settlements.

Tungsten.—There was a marked decrease in the output of wolfram, which fell from 4,431 tons in 1918 to 3,577 tons in 1919. As usual, most of the output came from Tavoy in Burma. The industry is still extremely depressed and many of the Tavoy mines have shut down.

Saltpetre.—There was a decided fall in the production of saltpetre, due chiefly to a decrease of 41 per cent. in the production of the United Provinces. The total Indian production amounted to 17,550 tons, valued at £471,247. The principal sources of

* The demand has recently fallen off owing to the state of the electrical industry.

supply are the United Provinces, Bihar and the Punjab. Practically the whole of the saltpetre produced is exported, the principal markets being the United Kingdom, the United States, Mauritius, Japan and Ceylon.

Ruby, Sapphire and Spinel.—There was a fall in the output of the ruby mines from 164,115 carats, valued at £40,310, to 158,577 carats, valued at £108,087. The mines are at Mogok in Burma and the output was divided as follows :—

Rubies	88,847	carats	valued at	£87,434
Sapphires	47,286	,,	,,	£20,170
Spinels	22,444	,,	,,	£483
Total	158,577	,,	,,	£108,087

Jadeite.—There was a decrease of nearly 37 per cent. in the output of jadeite in Burma, which fell from 3,201 cwts., valued at £25,209, in 1918 to 2,019 cwts., valued at £28,045, in the year under review.

Building Materials.—Statistics of these showing the production of building materials and road metal during the year 1919, can be consulted at the Department of Overseas Trade.

Bauxite.—The output of bauxite amounted to 1,682 tons, valued at £1,934. The whole output came from Jubbulpore. Important bauxite deposits have recently been discovered by Mr. C. S. Middlemiss in the neighbourhood of Chakar, in the province of Jammu. The quantity available by quarrying at the surface has been estimated at over one million tons, the beds extending uninterruptedly for many miles. Patches of the same material were also observed by Sir Henry Hayden at Saugar. Analyses of these specimens yielded 79·43, 67·03, and 59·56 per cent. of Al_2O_3 and 1·32, 14·15 and 20·67 per cent. of SiO_2 respectively.

Corundum.—The output of corundum amounted to 14,131 cwts. in 1919, scarcely more than a third of the production in 1918. Of this, almost the whole was mined in the Khasi and Jaintia Hills of Assam and a small quantity in the Rewah State in Central India.

Other minerals such as asbestos, gypsum, graphite, ochre, molybdenite, steatite, etc., were only produced in such small quantities that they do not call for special mention.

Mineral Concessions granted.—The number of mineral concessions granted during the year amounted to 708 as against 719 in the preceding year; 602 of these were prospecting licenses and 106 mining leases. In 1920, 572 prospecting licenses and 80 mining leases were granted.

The Geological Survey of India carried out a very full programme of surveys and research work all over India and the results can be seen in the Memoirs and Records of the Department, a list of which can be obtained from the Office of the Geological Survey of India, 27, Chowringhee Road, Calcutta.

Forest Economy.

The very fine work done each year by the Indian Forest Service covers too wide a field to receive adequate treatment in this Review. I therefore, propose to confine my attentions in the following section to the economic activities of the Forest Research Institute at Dehra Dun, which have already resulted in the establishment of more than one valuable forest industry in India. I am indebted to Mr. R. S. Pearson, C.I.E., Forest Economist, for helpful suggestions and advice. The following brief and imperfect outline of the work done in certain directions is derived from the Progress Report of the Department for 1919-20 and also from a most informative brochure entitled "The Work of the Forest Department in India," published in April, 1920, and which can be obtained from the Agents in London for the sale of Indian official publications.

The Forest Research Institute, Dehra Dun.—This admirable Institution for the prosecution of forest research was established in 1906 and was completed in 1914. The work has expanded so widely in the past seven years, however, that the accommodation is already found to be too limited and a site of over 1,000 acres has now been acquired on which to rebuild the Institute and to provide the necessary sites for new laboratories, workshops, demonstration areas, etc., etc. In Appendix III, page 245, I have included a detailed account of the proposed new Institute which has been taken from the columns of the "Indian Forester" of February, 1921, and which outlines both the present and suggested future organisation.

The following are a few of the activities of the Economic Section of the Institute during the year 1919-20 and are extracts from the year's Progress Report :—

> "The feature of the year's work has been the deputation in August, 1919, of the Forest Economist, Mr. R. S. Pearson, to America and England with the object of reporting on the organisation of forest research in the former country and of purchasing plant consisting of timber testing machines, seasoning plant, a saw-mill and other modern fittings for the Economic Section of the Research Institute. With a similar object Mr. Raitt, Cellulose Expert, proceeded to England in October, 1919, with a view to purchasing an experimental pulp and paper making plant. During the year under report therefore the work of the branch has consisted mainly in the purchase of new plant and fittings for the proposed extension of the Institute, and work at Dehra Dun has been practically limited to the routine work of replying to enquiries regarding sources, outturn and prices of forest products. Field work has similarly been limited to an examination of the markets for turpentine and rosin throughout India, inspection of the timber seasoning experiments in South India and an investigation regarding possible developments of the trade and the outturn and prices of timber in South India and the Andamans."

Observation and Encouragement of the Paper Pulp Industry.

"During October, 1919, Mr. Raitt proceeded on leave to England with the object of purchasing the requisite experimental pulp and paper making plant for the new workshops. With the erection of these plants it will be possible to carry out exhaustive experiments on the various kinds of bamboos, grasses, and other raw materials which exist in India and Burma and which now await the results of such experiments for their development."

"The question of utilising bamboo and large grasses for the manufacture of paper pulp has been under investigation for a long time at this Institute and had it not been for the great war there can be no doubt that the bamboo pulp industry would have been started ere this. Now that it is again possible to obtain machinery, definite steps have been taken to erect pulp mills in India. Thus, one mill is nearly complete near Calcutta and should be in a position to start work early in 1921, obtaining its bamboo from the Chittagong Hill Tracts; another is to be erected in Burma obtaining its bamboos from the Pegu Division, while a third scheme is contemplated in Tavoy. Bamboo pulp is actually being manufactured at present in Cochin State and also in Burma, though not on a large scale. The question of utilising elephant grasses for paper pulp requires much further enquiry which cannot be carried out until the experimental pulp and paper machines are erected."

There appears to be no doubt whatever that the world's economic supply of wood for pulp-making is becoming exhausted and that the general trend will be towards the greater utilisation of the almost inexhaustible supplies of bamboos, suitable for the industry, which are found in good positions near the coast in India and other countries further East. Industrialists in India are confident that the industry can be economically worked in the country and there are at present a number of large schemes under consideration. Not only does India itself provide a valuable market for paper, but it is hoped that before many years are past, she will be exporting paper pulp in considerable quantities for the World's markets. The development is one which deserves the serious attention of British financiers and paper makers. Full particulars with regard to the present position and prospects of the industry will be found in Mr. W. Raitt's paper, read before the Royal Society of Arts, London, in May, 1921, and also in a pamphlet on "The Utilisation of Bamboo for the Manufacture of Paper Pulp" published by the Department.

Antiseptic Treatment of Timber.—An experimental creosoting plant has been purchased from England, and experiments are being conducted, as a result of which two Indian Railway Companies are contemplating the erection of plants to treat conifer and other timbers. Cost is the main desideratum in this business in view of the rise in the price of creosote. A method advocated was to treat sleepers first with chloride of zinc and

then, in order to prevent the salt being washed out of the timber, to immerse the sleepers in oil. This was tried in India but with only partial success. A process has now been evolved in America, known as the Card process, by which the salt and oil are introduced simultaneously, which is claimed to give most satisfactory results. The Forest Economist visited, while in America, an installation working according to this system, and it is thought that it would be quite applicable to Indian conditions, and may solve one of the difficulties of introducing treated sleepers into India.

Physical and Mechanical Properties and Seasoning Powers of various Timbers.—Elaborate experiments are being made to season various timbers by natural methods. These experiments are receiving the final inspection this year. As regards artificial seasoning, standard American and British experimental seasoning plants, viz., a three-chambered Tiemann and a four-chambered Sturtevant plant, have been purchased. As it has long been realised that the present timber testing machine in the Economist's workshop is quite inadequate, three of the latest standard pattern machines have been purchased in America and two others in England, and have been erected in the Institute.

Finding of Markets and new uses for Timbers.—A constant stream of inquiries from firms and others on the subject not only of the utilisation of Indian timbers for special purposes, but also of the sources and available supplies of such timbers, is dealt with each year and bulletins on various timbers are compiled annually.

Probably the greatest stimulus which has been given to Indian timbers during recent years was the exhibit of Indian, Andaman and Burmese timbers at the Empire Timber Exhibition held in London in July, 1920. The Indian exhibit was the centre of much interest and has resulted in numerous enquiries being made for Indian timbers.

Gums, Resins and Oil-resins.—The possibilities of an industry based on the tapping of Salai for its gum-oleo-resin as a source of turpentine continues to attract considerable attention. Bulk samples obtained from Khandesh were examined at the Indian Institute of Science, Bangalore, and samples of products have been forwarded to an interested Bombay firm for transmission to London for valuation. Tapping operations are now being extended and further developments depend upon the erection of a distillery at some suitable centre.

Rosha Grass Oil.—The object of improved methods of distillation continues to elicit numerous enquiries. The question is being investigated on a commercial scale in the Central Provinces and Bombay and it is understood that the possibility of increasing the out-turn of grass in the Central Provinces is a question which is now engaging the attention of the local officers.

Wood Suitable for Wood Paving Blocks.—This subject is under observation in Bombay and the experimental pavements of Xylia blocks have been considerably extended.

Bobbins, Shuttles and Picking Sticks for Cotton and Jute Mills.—Experiments on a commercial scale on various Indian timbers are now being undertaken by the Utilisation Circle of the United Provinces. The leading firm of bobbin manufacturers in England has been approached with a view to starting a branch business in India.

Rifle Stocks.—Since it has been found impossible to find any really suitable substitute for walnut timber, operations are now being concentrated on the supplies of properly kiln-dried walnut half wroughts to the Ishapore Rifle Factory from the North-West Frontier Province and from Kashmir.

Three-ply.—The manufacture of three-ply has now passed beyond the experimental stage in Assam where ply boxes for tea are now being manufactured from a wide variety of timber species. Difficulties have, however, lately been encountered in the matter of a tendency to " cheesiness " in certain timbers, such as *Endospermum chimeuse* and *Tetrameles nudiflora*, when used for this purpose. This matter is one of vital importance to the industry and the possible solution of the difficulty is now being made a subject for detailed investigation. The possibilities of three-ply for tea and rubber boxes are also being considered by several firms in South India as it is now becoming increasingly difficult to obtain adequate supplies of suitable timbers at a price which will permit of the ordinary box industry being run at a profit.

Cooperage.—The general question is being investigated on a semi-commercial scale by the Utilisation Circle, Bareilly. The problem of finding a suitable timber or timbers for cocoanut oil casks in South India in addition to white cedar, which is the only timber now being used for the purpose, remains to be solved. Steps have been taken to purchase an experimental stave cutting and barrel making plant for the Economic Workshops of the Research Institute so that there is every hope that a solution of the problem of a suitable timber for oil casks will be found reasonably soon.

Charcoal Briquettes.—An experimental briquetting press was purchased and erected during the year and the first series of experiments on charcoal dust with a binder of *Bauhinia retusa* gum have been carried out. The problem of an entirely suitable binding medium is as yet unsolved, but valuable data on this subject have been collected during the Economist's tour in America which may be expected to indicate new lines for investigation.

Other Enquiries.—Miscellaneous enquiries from firms and individuals, private and official, continue to increase in number and variety of subject, a sure proof of the need for special officers

to deal with the various subjects. Such a need has been realised for a long time and steps have been taken for the recruitment from America and Canada of specialists in timber technology and seasoning.

The Indian Pine Resin Industry.—The following extracts from the Review of the work of the Forest Department will be of interest in view of the considerable and growing importance of the resin and turpentine industries in India :—

" The commercial exploitation of the resin of the Indian pines serves a wide range of subsidiary industries. It provides rosin for shellac making, soap manufactures, paper concerns, oil cloth, linoleum, sealing wax, printing inks, electric insulation, gramaphone records and wheel grease. And it also provides turpentine, which is the chief thinner and solvent employed in the paint and varnish trades, a mordant in calico printing, the basis of synthetic camphor, and an ingredient of boot polishes, embrocations and liniments.

" It is now well over a quarter of a century since forest officers in the North-West of India began to realize the potentialities of the wide pine belt along the foot hills and lower slopes of the Himalaya. Many of them being French-trained, it was not surprising that the spendidly organized tapping of the maritime pine of the Landes should serve them as a model, and so from the very start the conservative cup and lip method in use in France was adopted, thus ensuring the best possible yield of resin with the minimum risk of injury to the tree. And so from small beginnings in the United Provinces, and later in the Punjab, the industry has grown till now (for the year ended March 31st, 1919) the resin collection in the United Provinces and the Punjab amounts to 125,633 maunds net (4,615 tons), the operations covering 97,525 acres of forest with 2,756,142 blazes or channels in work, giving employment to at least 4,000 operatives.

" Since 1912 both in the United Provinces and the Punjab, extensive and successful organization has brought the harvesting of the resin to a high state of efficiency. Mr. E. A. Smythies' interesting pamphlet on ' The Resin Industry in Kumaon ' (Forest Bulletin No. 26, 1914) is available for those who wish to study the questions further. Space does not permit of an account of the forest operations connected with the harvesting of resin. The cost of the resin delivered at the factory site varies from Rs.4-0-0 to Rs.5-12-0 per maund (88 lbs.) net.

" It was in the factories and in the selection and devising of manufacturing methods best suited to the distillation of the Indian pine resin that the Forest Department found its hardest task, a task in which the Forest Research Institute at Dehra Dun, and the Imperial Institute, London, gave much

helpful advice and assistance. The primitive stills first used in the United Provinces and the Punjab were remodelled and modified till now both provinces possess batteries of stills of the best French type, steam operated and modified to suit Indian conditions, which are giving entire satisfaction by the excellence of their products and the economy of their working. The Indian rosin has been recently pronounced by the well-known paint and varnish firm of Messrs. Wilkinson, Heywood & Clark, Ltd., London, to be in some respects superior to French rosin, and large scale commercial tests are now in progress definitely to determine the commercial value of Indian rosin in relation to American, French and Spanish rosins. Such tests will materially assist the Forest Department in capturing the whole of the Indian trade, and that of Java, China, and possibly even of New Zealand and Australia, with which markets a sound business is already being built up. The Indian turpentine, too, has been standardised, and certificate No. 1766-C, dated the 7th July, 1916, of the Railway Board Test House, Alipore, testifies that the sample submitted (Jallo Factory, Quality 1) gave 'a very satisfactory paint film and should prove very suitable for paint manufacture.' The turpentine is guaranteed up to sample, and the Sales Managers, Bareilly, United Provinces and Jallo, Punjab, are always glad to furnish samples and quotations either direct or through local agents. The modern Government turpentine factory, which is managed by the Punjab Forest Department, is at Jallo, North-Western Railway, Lahore District.

"The cost of distillation and packing varies from Rs.4-5-0 to Rs.5-12-0 per maund net f.o.r factory, including depreciation, interest, share of administration charges and commission to agents. A maund of good resin yields on an average $\frac{7}{16}$ths of a maund of rosin and two gallons of turpentine, of which up to 1.5 gallon is Quality 1.

"The combined total output of the resin factories in the United Provinces and the Punjab has now reached just over 100,000 maunds of resin distilled (27.22 maunds=1 ton) yielding approximately 65,000 maunds of rosin and 156,000 gallons of turpentine, all classes. The gross revenue was Rs.1,572,414, the gross trading account profit Rs.823,951, and the net trading account profit Rs.775,575, while the invested capital stood at Rs.1,122,571. Interest and depreciation, per maund of resin distilled, comes to 8 annas. The financial aspect of the industry may therefore be considered quite satisfactory.

"The possibilities of development of the Indian pine-resin industry are considerable. The average annual consumption in India during the financial years 1907-8 to 1918-19 was, of rosin 89,119 maunds and of turpentine (including turpentine substitutes) 245,729 gallons. The following table of the

quantities of turpentine imported and the Indian output during the War years will be of interest :—

Years.	Imported.	Indian Output.	Total.
	Gallons.	Gallons.	Gallons.
1913–14... ...	193,937	58,803	252,740
1914–15... ...	142,438	78,489	220,927
1915–16... ...	86,700	111,835	198,535
1916–17... ...	80,000	125,663	205,663
1917–18... ...	140,772	136,052	276,824

" At present the resin industry is in the position of having to retard or accelerate its expansion with direct reference to the speed with which the remainder of the Indian market can be secured and outside markets, such as Java, China, etc., developed. It is here that closer co-operation with the trade interests of India is necessary, and more active measures have to be adopted to advertise Indian rosin and turpentine.

" So far only the resin of chir pine, *Pinus longifolia*, has been dealt with commercially. This pine covers some 1,500 square miles in Government forests and another 1,800 square miles in Native States, while the blue pine, the Khasia pine and *Pinus Merkusii*, the resin of all of which has been well reported on, extend over some two hundred, eighteen hundred and twelve hundred square miles respectively, all under the control of the Forest Department. It would not be safe to assume that even half of the Government-owned area will ultimately prove workable, but these figures are sufficient to show that the revenue now derived from this industry is only a fraction of the return which may one day be realised. Recent expert estimates place Indian production at 300,000 maunds of rosin and 800,000 gallons of turpentine a year ten years hence, and ultimately at double those figures, that is, 430,000 cwts. of rosin and 120,000 cwts. of turpentine a year.

" The industry is, therefore, one to which in recent years the Forest Department has rightly devoted a good deal of attention, and though expansion must be gradual, yet the prospects are there, and it only requires effort along sound commercial lines to reap a good harvest. Any forest industry which yields such satisfactory financial results, and yet leaves the main source of forest wealth, namely, the timber, a realizable asset, is deserving of the most careful study."

The Match Industry.

" India is almost entirely dependent for its supplies of matches on imports from Japan, Sweden and Norway. It is now twenty years since the first attempt was made to

manufacture matches in India. One of the first factories to be erected on modern lines was at Ahmedabad. A detailed enquiry into the question led in 1910 to the publication of a memoir entitled : ' The Prospects of the Match Industry in the Indian Empire, with particulars of the proposed Match Factory Sites and Woods suitable for Match Manufacture ' (Indian Forest Memoirs, Volume II. Part I. R. S. Troup). At that time there existed in India eight factories, namely, three in the Bombay Presidency, two in the Central Provinces, one in Kashmir, and two in Calcutta. At the present time the number of match factories in India has not increased, for although new ones have been established, some of the older and smaller ones have disappeared. While some of the concerns are able to make moderate profits, others are not and, generally speaking, match making in India cannot be said to have emerged from the experimental manufacturing stage, and very close study, expert knowledge and keen business methods will have to be applied before this industry in India can be placed on a satisfactory basis."

" The imports of matches in 1920-21 amounted to over 12¼ million gross boxes, valued at £1,670,138, or which Japan supplied 77 per cent. and Sweden 21 per cent. The passing of the Indian White Phosphorus Matches Prohibition Act V of 1913 temporarily checked imports, but the trade soon recovered, especially that with Japan, owing to the careful manipulation of the trade by the Japanese combine of manufacturers and shippers, who have largely captured the Indian trade at the expense of Sweden and Norway."

" The most universally used wood in India for match making is *Bombax malabaricum*, the ' Simul ' or cotton tree. The timber of this tree makes up into a strong good box of fair appearance. It yields fair sticks, the drawback to the timber being that it discolours, that it does not allow of the stick being cut uniformly square in section and that the waste in conversion is considerable. A far superior stick can be obtained from *Abies Pindrow* and *Picea Morinda*, the silver fir and spruce respectively.

" The difficulties under which the industry has laboured in India may be summarised as follows :—(1) Imported matches are sold at extraordinarily cheap rates; (2) great difficulty has been experienced in obtaining a first-class indigenous timber within a working figure of cost; (3) railway freight has hit the local trade, especially in connection with imports of chemicals and distribution of the manufactured product; and (4) the cost of landing the timber in the round at a factory site has in many cases turned out to be excessive. In spite of manifold difficulties experienced, the industry still persists and the solution to the problem in Northern India, where in the Himalayas large tracts of spruce and fir woods are available, will probably be found in organising the industry on a sufficiently large scale to

reduce working expenses to a minimum and to be able to buy chemicals in bulk and thus gain by the wholesale rates obtainable and by organising subsidiary industries, the products of which are required in placing matches on the market, such as glue, paper and packing cases, etc. To supply India alone with matches requires a sustained yield of 4,000,000 cubic feet of timber annually, and the industry is essentially one in which large scale production pays, while large scale production entails command of large capital. The problem is a difficult one, but not insoluble, and the Forest Department is undertaking research in Sweden and elsewhere in order to be able to attack the problem in the light of European experience and practice.

" In Central and Southern India the cost of extraction to a line of communication and the high freight on the timber in the rough to the factory are the chief difficulties to be overcome; the solution undoubtedly lies in the formation of plantations, and as *Bombax malabaricum* is easily propagated and grows fast, this should present no difficulties, always provided that the timber of this species is considered good enough for the purpose."

The Lac Industry.—An investigation into the position of the industry was carried out in the Spring of 1920 by Mr. H. A. F. Lindsay, C.B.E., I.C.S., Director-General of Commercial Intelligence, and Mr. C. M. Harlow of the Indian Forest Service. Their report on " Lac and Shellac " has just been published and is a mine of interesting and valuable information with regard to the subject. I cannot do better than refer my readers to Appendix IV, page 249, where I have reproduced the Introduction from this Report, which gives a succinct and accurate statement of the present position. The following summary of recommendations may be of interest in view of the exhaustive nature and recent date of the enquiry :—

" The principal defects from which the lac industry at present suffers are, firstly, speculation, and secondly, adulteration. Both have their origin in the peculiar conditions of the industry; the ignorance and improvidence of the cultivator; the long distances from which stick-lac has to be brought to the markets; the large number of agents through whose hands it passes; and the difficulty of estimating forthcoming supplies. The following general remedies have been suggested in the preceding chapters.

" In the first place, production should be stimulated in order that supplies may more nearly equal the foreign demand, which shows every tendency to increase. A detailed scheme is outlined in Chapter V for improved methods of cultivation on intensive lines, which might be adopted in Government Forests suitable for lac cultivation. In fact departmental working should, wherever possible, take the place of the present contract system which practical

experience has shown to be unsatisfactory. In the second place, where any choice is possible in the selection of host-trees, preference should be given to those which produce the better qualities of lac. Thirdly, the greatest importance is attached to the organisation of brood and demonstration farms in order that zamindars and cultivators may be assured constant supplies of brood-lac of good quality, and may learn scientific methods of cultivation and collection.

" It is suggested that action on the above lines should be undertaken where possible by provincial Forest Departments. The results should be not merely beneficial to private cultivators, but should also with careful organisation bring in no small accession of revenue. The two Governments chiefly concerned are those of Bihar and Orissa and the Central Provinces. Other Local Governments and many States will doubtless find it to their advantage to adopt similar methods. The two Governments mentioned would also be advised to appoint specialists to supervise the organisation of lac farms and to undertake research in scientific methods of cultivation and collection.

" Further measures suggested for Government enterprise are the publication of periodical reports on crop conditions in areas for which reliable information is forthcoming; and also the organisation of co-operative credit societies for the maintenance and distribution of adequate supplies of brood lac and for co-operative action in the extension of cultivation.

" On the scientific side the late Mr F. M. Howlett has suggested lines of research bearing chiefly on the life histories of the insect and its enemies and on the chemistry of lac. These investigations are, however, beyond the scope of provincial Forest Departments, and it is suggested that they should be undertaken by the trade itself. For this purpose funds may be made available by the imposition of a small cess on exports, and the funds administered by the Lac Traders' Association now in course of formation in Calcutta, on much the same lines as the Indian Tea Cess is administered by the Indian Tea Association. Expenditure on research may be roughly estimated at one lakh of rupees per annum. As exports during recent years have averaged 200,000 chests yearly, a cess of only eight annas per chest would give the required sum and would provide for expansion as trade increased. Later, as funds permitted, the association might undertake the preparation of quantitative crop forecasts and also possibly propaganda work in foreign countries.

" We endorse the suggestions offered by Mr. Howlett. We would, however, emphasize the importance of the Forest and Scientific lines of research being carried on at a single centre. We understand that Jubbulpore is likely to be selected as the site for forest research, and in this case we

would prefer that the laboratory should be located at Jubbulpore rather than at Ranchi."

Lumbering and Wood-working Practice in India from the point of view of the British Manufacturer of Plant and Machinery.—British manufacturers are to some extent handicapped by the fact that the lumbering and wood-working industries in the United States and Canada are the most highly developed and organised in the world and consequently Indian Forest Officers very naturally study American conditions and methods with a view to their application to Indian conditions. This is bound to entail the purchase of large and increasing quantities of American plant. I would refer British makers to the recent report in three volumes by Mr. F. A. Leete of the Indian Forest Service on "Lumbering and Wood-working Industries in the United States and Canada together with Notes on British Practice and Suggestions for India based on a tour in North America in 1918." In this valuable report, the fullest possible description is given of American practice with regard to logging, sawmills, manufacture and research; together with lists of American makers of the various types of plant. The names of the leading British manufacturers are also given, but one is forced to the conclusion that it will probably be the American practice which will be most widely introduced into India. I had hoped that it might have been possible to introduce Canadian methods and plant in India, but the following extract from the Report is interesting in this connection :—

> "My instructions being to study lumbering both in Canada and in the United States, at first sight it may appear surprising that I gave less than a month to the former. This was because Canada is far behind the States in matters likely to be of interest in India in respect to logging and wood manufacture. The fact that logging in Eastern Canada is done under snow conditions more or less rules it out altogether.
>
> "In British Columbia I saw practically nothing that I had not already seen in the States of Washington and Oregon. If my tour had been started from the West—as would be the case with anyone coming direct from India—I should naturally have stayed longer in British Columbia, but even there the greater part of the logging and mill machinery comes from the States.
>
> "Many so-called Canadian firms are simply branches of parent firms in the United States. It is also a common practice to import parts of machines from the States and merely to assemble them in Canada. A considerable quantity of sawmill plant is made in Ontario and a certain amount of logging machinery in British Columbia and Eastern Canada, but for manufactures such as veneers, cooperage, creosoting, etc., all supplies comes from the States."

If British makers of saw mill machinery; timber testing plant; machinery for wood-pulp manufacture, destructive distillation of wood and briquetting; drying kilns and plant for seasoning timber; barrel-making machinery; veneer and plywood machinery; match making machinery; and miscellaneous items such as re-saws, planers, matchers, lathes, &c., wish to obtain their fair share of the future increased trade in India, they can no longer rely entirely upon receiving these enquiries at the works. They should instruct their branches or agents in India to keep in the closest touch with the Indian Forest Officers and particularly with the Indian Research Institute at Dehra Dun, and should be prepared to give every assistance and advice to the Department. Those firms who are represented on the spot secure a considerable advantage, as they can consult with the purchasing officers as to the most suitable type of plant, can supervise its erection and carefully watch its subsequent working and suitability for the purposes to which it is being put. In view of the certainty of American competition in this branch, it is only by an active organisation in India that British makers will be able to hold their own.

The Extension of Irrigation.

To give an adequate account of the wonderful progress of irrigation in India would be a fascinating task, but would require a volume in itself. The following brief notes of the progress made with irrigation works throughout the country during the year 1919/20 are abstracted direct from the Review of Irrigation in India, 1919/20. Readers who may wish to have a more complete account of irrigation with a detailed description of the great projects pending, such as the Sukkur Barrage on the Indus in Sind, would do well to wait until the first triennial review of irrigation is published early next year.

The Monsoon.—The monsoon rains of the year, though only 5 per cent. in excess of the normal, contrasted very favourably with those of 1918, which were as much as 18 per cent. in defect. In the major irrigating provinces the rainfall was below normal only in Sind.

Total Area Irrigated.—During the year 1919-20, the total area irrigated by all classes of works in India, excluding the areas irrigated in the Indian States, amounted to over 28 million acres or three million acres more than in the previous year. Towards this area Productive Works contributed 18,876,234 acres, Protective Works 717,377 acres, and Minor Works 8,551,253 acres.

Comparison with the Results of Previous Triennium.—The following table compares the area irrigated by Government Works, excluding Indian States, during the year under review

with the average area so irrigated during the previous triennium :—

Province.	Productive.		Protective.		Minor.		Total.	
	1916-17 to 1918-19.	1919-20.	1916-17 to 1918-19	1919-20.	1916-17 to 1918-19.	1919-20.	1916-17 to 1918-19.	1919-20.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Madras	3,492,027	3,717,480	106,452	108,519	3,560,228	3,866,531	7,158,707	7,692,530
Bombay Deccan	37,355	55,272	85,011	134,690	182,228	211,498	304,594	401,460
Sind	1,285,548	1,357,585	—	—	2,032,462	2,124,700	3,318,010	3,482,285
Bengal	84,454	89,692	—	—	25,292	20,799	109,746	110,491
United Provinces	2,923,602	3,086,095	185,290	229,334	157,585	136,229	3,266,477	3,451,658
Punjab	7,720,171	8,890,005	—	—	925,948	944,680	8,646,119	9,834,685
Bihar and Orissa	844,747	847,118	54,580	94,699	1,480	3,107	900,807	944,924
Burma	275,413	317,395	—	—	1,147,049	1,169,316	1,422,462	1,486,711
Central Provinces	88,396	148,592	93,317	150,135	21,468	26,927	203,181	325,654
North-West Frontier Province.	345,148	367,000	—	—	—	—	345,148	367,000
Rajputana ...	—	—	—	—	20,397	26,894	20,397	26,894
Baluchistan ...	—	—	—	—	14,305	20,572	14,305	20,572
Total ...	17,096,861	18,876,231	524,650	717,377	8,088,442	8,551,253	25,709,953	28,144,864

The area irrigated by Government irrigation works in 1919-20 is the largest on record, exceeding the previous record of the year 1916-17 by 2,117,900 acres.

Areas Irrigated and Returns Realized by Productive Works.—The area irrigated by Productive Works was greatest in the Punjab, where over 8¾ million acres were recorded, last year's figures being exceeded by more than a million acres. The Madras Presidency came next with an area of nearly 3¾ million acres while in the United Provinces and Sind, the area irrigated by Productive Canals amounted to three and one-and-half million acres, respectively. Bihar and Orissa contributed 847,000 acres, the North-West Frontier Province 367,000 acres and Burma 317 acres.

The total capital outlay, direct and indirect, to the end of the year 1919-20, on Productive Irrigation Works, excluding navigation works but including expenditure incurred on irrigation works under construction, amounted to a little over Rs.5,835 lakhs. The gross revenue for the year amounted to Rs. 810 lakhs and the working expenses to Rs. 242 lakhs. The net revenue was therefore Rs.568 lakhs, which represents a return of 9¾ per cent. on the total capital outlay.

Of the several provinces, the return on capital outlay was highest in the Punjab, where the canals yielded 14·44 per cent. In Madras, including schemes which have proved unremunerative, the percentage of return was 10·75, while in the United Provinces a return of 10·25 per cent. was realized.

Protective Works.—The total area irrigated by the thirty-eight Protective Works in operation during the year under review

amounted to 717,400 acres. In the United Provinces, where works of this class have been in operation longer than in the other provinces, the area irrigated was 229,300 acres. The Central Provinces came next with 150,100 acres. Protective Works irrigated 134,700 acres in the Deccan and Gujrat, 108,500 in the Madras Presidency and 94,700 acres in Bihar and Orissa.

The total capital outlay to the end of the year under review on Protective Irrigation Works amounted to 1,112 lakhs. The net revenue for the year was over four lakhs, which is equivalent to 0·37 per cent. on the total capital outlay. This low return is partly due to the fact that the capital account is at present inflated by expenditure on works under construction which have not yet commenced to earn revenue. The net revenue earned was, however, double that of the previous year.

Minor Works.—The minor works are, for purposes of accounting, subdivided into three classes as described below :—

Class I.—Works for which Capital and Revenue Accounts are kept.—These are works, the estimated capital cost of which exceeds Rs.50,000 and the revenue from which is expected to cover the total working expenses.

Class II.—Works for which only Revenue Accounts are kept.—These are generally works costing less than Rs.50,000.

Class III.—Works for which neither Capital nor Revenue Accounts are kept.—The works of this class consists mainly of small tanks and field embankments or small drainage schemes to prevent deterioration of land or to effect improvements of land with a view to rendering it fit for cultivation.

One hundred and twenty-two minor works of the first class described above were in operation at the close of the year 1919-20, one hundred and fifteen being irrigation works and seven navigation works, the area irrigated by the former amounting to 2,005,066 acres. The total capital outlay on irrigation works of this class at the close of the year was Rs.446¼ lakhs, and the net revenue amounted to nearly Rs.40 lakhs, representing a return of 8·9 per cent. on capital. On the seven purely navigable works, the total capital outlay at the end of 1919-20 amounted to 242¼ lakhs. The working of the navigation canals resulted in a loss of Rs.3 lakhs. The net revenue realised during 1919-20 from Class I. Irrigation and Navigation Works as a whole represented a return of 5·35 per cent. on a total capital outlay of Rs.688½ lakhs. The total area irrigated by minor works of all classes amounted to 8,551,300 acres, or two-sevenths of the whole area irrigated during the year by Government canals.

Comparison of Total Cropped Area with the Area Irrigated.—A comparison of the acreage of crops matured during 1919-20 by

means of Government irrigation systems with the total area under cultivation in the several provinces is given below :—

Province.	'Net area cropped.	Area irrigated by Government irrigation works.	Precentage of irrigated area to total cropped area.	Capital cost of Government irrigation works to end of 1919-20 in lakhs of rupees.	Estimated value of crops raised on areas receiving State irrigation in lakhs of rupees.
	Acres.	Acres.		Rs.	Rs.
Burma	14,862,000	1,487,000	10·0	276	570
Bengal	24,470,000	110,000	0·4	259	88
Bihar and Orissa	25,900,000	945,000	3·6	632	957
United Provinces of Agra and Oudh.	34,959,000	3,452,000	9·9	1,325	2,866
Ajmer-Merwara	286,000	27,000	9·4	35	9
Punjab	25,364,000	9,835,000	38·8	2,251	6,241
North-West Frontier Province ...	2,675,000	367,000	13·7	277	253
Sind	4,389,000	3,482,000	79·3	335	1,068
Bombay Deccan	23,807,000	401,000	1·7	516	384
Central Provinces (excluding Berar).	16,930,000	326,000	2·0	371	226
Madras	38,210,000	7,693,000	20·1	1,172	4,698
Baluchistan	217,000	20,000	10·6	44	8
Total	212,069,000	28,145,000	13·3	7,493	17,363

"It will be seen that 13 per cent. of the cropped area was irrigated by Government irrigation works, and that the estimated value of the crops so irrigated amounted to nearly 2½ times the total capital expended on the works."

Hydro-Electric Development.

In my last report, I referred to the four great schemes either completed, in progress, or projected, which the Tata Industrial Group had in hand for supplying electrical energy to Bombay. The present position of these is as follows :—

(1) The original Khopoli scheme for the supply of power from the Western Ghats to the Bombay mills has been working satisfactorily for some years.

(2) The Andhra Valley scheme to supplement the former supply is almost completed and it is expected that power will be supplied early next year, if not before then.

(3) The Nilamulla scheme for a third power station in the Western Ghats to supply Bombay is now in progress. The construction works are being proceeded with and land is being acquired for the dam and the lake sites. Orders for the machinery and plant have not yet been placed and in view of the present abnormal conditions, both as regards prices overseas and also in the Indian money market, the placing of contracts may possibly be deferred for a little time.

(4) The great Koyna River Project has been carefully examined and a great deal of the preliminary work has been done, but the scheme is so vast and will entail such a great expenditure of capital that it will probably have to be postponed until large issues can again be made in the Bombay money market.

The Hydro-Electric Survey.—In the meantime the Hydro-Electric Survey of India which was inaugurated in 1918 has proceeded steadily with the work and is now in the sole charge of Mr. J. W. Meares, M.I.C.E., M.I.E.E., Electrical Adviser to the Government of India. Two most illuminating reports have been compiled, a preliminary report on the Water Power Resources of India published in 1919, and a second report embodying the information ascertained during the season 1919-20 which was published last year. I would commend these publications to the careful attention of British Engineers or Manufacturers likely to be interested.

The first season was spent in making enquiries and preparing the ground, ordering instruments and obtaining promises of selected Engineers in the Provinces. The results are given in the preliminary report. The second season was spent in visiting the officers on special duty, checking their reconnaissances and making other reconnaissances, both in British India and in Native States. Meanwhile the selected officers have been collecting and training their staff and following the lines pursued by the Chief Engineer in the first season. The results of the reconnaissances, as was to be expected, are not very extensive; the next season's work should result in a real advance. Nevertheless a good deal of additional power has been located and assessed.

After a preliminary investigation the Hydro-Electric Survey estimate that there are about $1\frac{3}{4}$ million electric horse-power actually in sight in India, but *this is, of course, vastly below the actual available power which the final results of the Survey will disclose.* Moreover the great perennial snow-fed rivers have been scarcely touched upon and their potential power has not been determined. The following is an approximate estimate of the power of all kinds in use in India in 1919.

Province.	*Brake Horse-power.*	
Assam	22,550	
Bengal	25,318	exclusive of Calcutta area.
Calcutta area	176,200	
Bihar	2,325	apart from collieries, etc.
Bombay Presidency	32,872	
Bombay City area	750,000	
Burma	17,750	exclusive of rice mills, etc.
Central Provinces	32,773	
Madras	39,568	
North-West Frontier Province	—	
Punjab	15,734	steam only.
United Provinces	38,548	
Total	1,153,638	

One of the difficulties at present is that the administration of the Survey is in the hands of each Provincial Government, which is responsible for conducting the survey in its area. Whether from lack of staff, lack of funds, or lack of interest, the Provinces vary considerably in the energy with which they are taking up the matter. Steady progress, however, is being made and it is hoped that in another three years or so the initial part of the work will be completed.

In conclusion, I would like to quote from the final paragraph of the Preliminary Report: "While this work is being carried out, the interlaced question of industries is in strong hands, and the combination of power and industries is essential to the prosperity of both. . . . There will be keen competition in the market for orders and British manufacturers of pipes, turbines, generators and switchgear must see to it that they are not left stranded. Hitherto they have been content to take the small orders and to let the large ones go to countries that have specialised in water power. It has even been asserted that engineers from abroad are essential to the proper erection of plants when received. It is high time that these fallacies should be disproved."

Since these words were written, it is only fair to add that British makers of water power plant have made very great strides. Water turbines of the largest size are now being made by two or three large firms in England. The hydraulic gear has always been a speciality of British makers, while the large British groups can manufacture generating sets as cheaply and well as any of their foreign competitors. It is only in extra high-tension equipment that they have hitherto not had much experience, but even here a determined effort has been made to manufacture plant for even the largest schemes. Moreover, the large British groups have now a technical and sales organisation in India which is far ahead of their rivals and they are prepared to give that personal attention to schemes which their foreign competitors cannot do, as they have not the requisite organisation.

Developments in Economic Research.

The Chemical Services Committee.—In October, 1919, the Government of India appointed a Committee, with Professor J. F. Thorpe as President, with the following terms of reference:—

(1) To consider whether an all-India Chemical Service is the best and most suitable method of overcoming the difficulties and deficiencies pointed out by the Indian Industrial Commission.

(2) In the event of the Committee approving the principle of an all-India Service, to devise terms of recruitment, employment and organisation; to indicate the extent to which chemists already in Government employ should be included in that service; and to suggest what should be the relations of the proposed organisation with the public and with Departments of the Government of India and of Local Governments.

(3) In particular to frame proposals for the location, scope and organisation of institutions for chemical research.

The Committee submitted its report in 1920, and the following are the principal recommendations :—

(1) That a chemical service should be constituted.
(2) That the service should be called the Indian Chemical Service.
(3) That the service should be controlled by a Director-General.
(4) That a Central Imperial Chemical Research Institute should be erected at Dehra Dun under the Director-General of the Chemical Services as Director, assisted by a number of Deputy Directors.
(5) That each Deputy Director should be in charge of a separate Department and that, in the first instance, there should be four Departments: (*a*) Inorganic and Physical Chemistry; (*b*) Organic Chemistry; (*c*) Metallurgical Chemistry; (*d*) Analytical Chemistry.
(6) That a Provincial Research Institute under the control of the Local Government should be erected in each Province near the chief seats of industry in that Province, and that each Provincial Research Institute should be under a Director of Research.
(7) That the functions of the Central Imperial Institute should be as follows:—

To create new industries and to carry out the development of new processes up to the "semi-large" scale, or further if necessary; to investigate those problems of fundamental character, arising from the work of the Provincial Institutes, which have been transferred to the Central Institute by the Local Director of Research in consultation with the Director-General. Such problems will be those which have no apparent immediate practical importance, but which, in the opinion of the Director-General and the Director of Researches, are likely to lead to discovery of fundamental industrial importance affecting the industries of the country generally; to assist in the co-ordination of the work in progress in the Provinces, both by means of personal discussion between the officers of the Central and Provincial Institutes during the course of the tours made by the Director-General and the Deputy Directors, and by means of periodical conferences of Provincial and Imperial Officers to carry out such analytical work as may be required and to correlate the methods of analysis in general use throughout the country; to maintain a Bureau of Information and Record Office; and to issue such publications as are considered necessary.

(8) That the functions of the Provincial Research Institutes should be as follows:—

To maintain close touch with the works-chemists and with the works generally and to work out any problems which may be submitted to them; to develop and place on an industrial scale new industries which have been previously worked out in the laboratory and "semi-large" scale by the Central Imperial Institute; to carry out such other work as may be necessary to establish and foster new industries peculiar to the Province; to carry out such analytical work of a technical character as may be required in the Province, and to erect and control sub-stations in such parts of the Province as the development of industry may require.

(9) That, under 8 above, arrangements should be made by which a firm supplying a problem should have the use of the solution for an agreed period of time prior to its publication.
(10) That members of the service should be lent to private firms as occasion demands and should, during the period of their service, be paid an agreed sum by the firms.

(11) That the Research Institutes should not undertake manufacture in competition with private enterprise, but that chemical industries developed in accordance with 8 above should be handed over to private firms as soon as practicable.

(12) That, whenever necessary, experts should be employed to establish chemical industries based on known processes.

(13) That the work of the Central Imperial Institute should be controlled by a Board, of which the Director-General will be Chairman, and which will comprise the Deputy-Directors and such other persons as the Government of India may determine.

(14) That the Central Imperial Institute should have no administrative control over the Provincial Research Institute, but that no appointment as Director of Research should be made without consulting the Director-General.

(15) That the Director-General and Deputy-Directors should visit Provincial Research Institutes periodically and co-ordinate the work done in each.

(16) That chemists employed at Provincial Research Institutes should be appointed in the first instance by the Local Government in consultation with the Director of Research and the Director-General.

(17) That chemists so appointed should be members of the Chemical Service and should be seconded for service under the Provincial Governments and be paid by them.

(18) That agricultural chemists should not at present be included in the service.

(19) That a Ministry of Science should be created as soon as practicable.

(20) That the Deputy-Director in charge of Analytical Chemistry should co-ordinate the methods of analysis in use throughout India and should act in an advisory capacity to the various Provincial Government Analysts who should be attached to each Provincial Research Institute.

(21) That Provincial Government Analysts should be under the control of the Directors of Research and should take over the chemical work now carried out by the Chemical Examiner and Government Test House.

(22) That the question of the connection of the Indian Institute of Science, Bangalore, with the Chemical Service, should await proposals from the Council of the Institute.

(23) That a Bureau of Information and Record Office, a Library, and a Museum should be attached to the Central Imperial Institute and to each Provincial Research Institute.

(24) That a Chemical Survey of India should be carried out at the earliest possible moment.

(25) That the Government of India should give maintenance and equipment grants to students to enable them to undergo the training in chemical research required for recruitment.

(26) That liberal grants, free from the customary accounts and restrictions, should be given for the initiation of the scheme and for the development of industries through the medium of chemical research.

The question of the desirability of creating an all-India Chemical Service is still under consideration and came up for consideration at a conference of provincial ministers and directors of industry, held at Simla on May 28th, 1921. The general trend of opinion in the provinces is adverse to the creation of further Imperial Indian Services, over which the local governments have no control, and this feeling is profoundly affecting

the institution of both an Imperial Industrial Service and also the all-India Chemical Service. Sir Thomas Holland, however, pointed out very clearly and convincingly the great advantages which would accrue from a strong centralised service, which would consider India's needs as a whole and so prevent overlapping and duplication of effort. It was finally decided that the Ministers should return to their provinces and discuss the comparative advantages and disadvantages of an Indian Chemical Service and final consideration of the whole question was postponed.

The Indian Institute of Science, Bangalore.—The following brief account of the Institute and the useful work which is now being carried on has been specially prepared for inclusion in this report by the officiating Director of the Institution and merits close attention, particularly on the part of British makers of plant and apparatus for chemical processes and electric technology.

The Indian Institute of Science owes its origin to the genius and munificence of the late Mr. Jamsetjee Nusserwanjee Tata, who about the year 1896 proposed to endow a Research Institute for India with a sum of £200,000 (£1 is taken as Rs. 15). Unfortunately, before the scheme could be carried out, Mr. J. N. Tata died, but his sons, Sir Dorabji J. Tata and the late Sir R. J. Tata, immediately announced their intention of carrying out their father's wishes, and the result is the present institution.

In addition to the gift of the Tata brothers, the Government of Mysore presented the site of 371 acres in Bangalore, a capital sum of £33,000, and make an annual grant of £3,300, while the Government of India presented £16,700 towards capital expenditure and contribute annually a sum equal to half the receipts from other sources.

The annual income has thus been until quite recently about £20,000, but now, owing to various circumstances, it has considerably increased and for the current year is £35,000. The spending of this income lies in the hands of a Council upon which the persons and the Governments interested are represented, but the Institute is not a Government Institution and its members are not subject to Government regulations.

As at present constituted the Indian Institute of Science is an institution for advanced study and research, with special regard to the interests of India. Students who are as a rule graduates of Indian Universities are admitted and pay no fees for tuition or use of apparatus, while the majority of them receive scholarships from the Institute or from local governments or are paid by private firms.

There are two main branches of study, electric technology and chemistry. The department of electric technology is organised on rather different lines to the chemistry departments owing to the fact that there are at present no students from other institutions sufficiently well trained to be capable of doing independent research on electrical problems. Consequently the work in this

department consists mainly of an organised course of study on the lines of advanced university teaching. There are in addition all facilities for research work and the equipment is of an unusually high-class nature. In particular, there is a very fine collection of standard measuring instruments which are available for testing purposes in the event of disputes arising as to the reliability of commercial instruments.

The department also possess a testing machine, and during the war a large number of Indian timbers were tested as regards their suitability for aeroplane construction. At present an electric furnace is being erected for certain investigations in connection with the manufacture of aluminium.

The work in the chemistry departments consists entirely of advanced practical work in special branches of chemistry or in research work. There are no classes or lectures.

The students may be classified as follows :—

1. Those engaged in more or less routine work undertaken as a preliminary to research.
2. Those engaged in purely scientific research, that is to say, research on a subject which does not appear at present to have any technical bearing.
3. Those engaged in studying technical problems.
4. Vacation workers, consisting of lecturers or professors from colleges who make use of the facilities afforded by the Institute during their vacation or leave.

The number of students in the chemistry departments in 1920 was 66, but not all of these remained for a whole year.

The chemistry departments are usually well equipped for research on technical problems, and in fact the equipment is more extensive than in any similar institution in England. Investigations are carried out first in the laboratory and then extended to such a scale that the actual plant which would be used in the factory can be employed. This plant may be full size, or rather smaller. Special attention is given to bio-chemical problems including fermentation and sewage treatment.

The nature of the work carried out varies according to circumstances, but it may be classified as follows :—

1. Examination of raw materials and determination of their suitability for a given purpose. The Institute undertakes general analytical work, but not of the type usually carried out by Government chemical examiners. In order not to compete with private practitioners, fees are charged which are somewhat higher than the prevailing market rates.

2. Effecting improvements in existing processes. This can frequently be done by correspondence alone, but experiments are often necessary.

3. Investigation of processes new to India. It frequently happens that small but important technical details are not available or are only to be had by employing an expert at a very high salary. These can often be found out by erecting an experimental plant, which at the same time gives a fair estimate of what

working costs are likely to be, indicates what modifications are required owing to local conditions, and affords training for the students who will eventually have to assist in the management of the factory. This method has been adopted with some success at the Institute of Science, the first case being that of the distillation of sandalwood oil for the Mysore Government. Small stills and condensers were first constructed to arrive at the necessary data and then one unit of commercial size was made, erected and tested. At the same time experiments were made on the most suitable machinery for reducing the wood to powder. From the results, the whole of the plant for the present factories which now distil the bulk of the world's supply of oil was designed, and the stills and condensers made in the country using the Institute ones as patterns.

Similar work was done to enable a thymol factory to be started and a chemical factory is now being designed for Bengal on lines indicated by experimental work at the Institute.

At present the laboratories contain complete plant for the production of bichromates, white lead, sodium thiosulphate, hardened oils, aluminium and caffeine in quantities sufficiently large to afford data for commercial purposes and an activated sludge plant for sewage research is shortly to be installed.

Experiments of this nature are naturally expensive to carry out and are usually financed by private firms who pay for raw materials and any special apparatus which the Institute cannot lend, in addition to the salaries of the men carrying out the experiments. Certain fees are also payable in the case of private firms or Governments who do not contribute to the Institute finances.

4. Investigation of new processes likely to prove of commercial value. The scientific principles underlying any such processes are first thoroughly investigated on a small scale, and if the results appear promising larger plant is constructed as in (3).

The Institute possesses a large library with sets of all important scientific and technical journals dealing with chemistry, physics and electrical engineering as well as a large number of modern text books.

It will be seen from the above that the Indian Institute of Science is more particularly equipped for assisting Indian manufacturers, but this does not preclude its being of use to British industralists. Some of the directions in which assistance could be rendered are :—

1. The analysis and investigation of raw materials which can frequently be carried out more satisfactorily in India than in England. Most of the chrome iron ore exported from South India during the war was analysed at the Institute and part payment made on the basis of this analysis immediately upon shipment.

2. The collection of information as to the quantity, quality and prices of raw materials.

3. The preparation of commercial samples of new or little known raw materials such as oils or drugs.

4. The testing of instruments or electrical machinery about which complaints may have been made.

The Institute has been handicapped in the past by shortage of European staff and particularly of those with expert technical knowledge. Two more members are being added shortly, and negotiations are in progress with certain local governments with the idea of locating at the Institute of Science the Provincial Chemical Institutes recommended by the Chemical Industries Committee. If this can be done it will be possible to collect together a number of experts in different subjects and thereby greatly increase the utility of the Institute.

I understand that nothing has so far been published with regard to some of the most important work of the Institute, as it has been experienced that such publication merely results in a host of imitators of the process. Papers, however, are now being prepared on sandalwood oil and caffeine which will be published shortly. I think, and the Director agrees, that the Institute might be of service to British manufacturers in introducing their plant into India. It has been found that certain British chemical plant, even by well-known makers, is so badly designed for Indian conditions and the price is so high that efforts are now made to get as much as possible constructed locally. The Institute are in a position to, and in fact do advise the purchase of certain machinery and their experience has been that, with a few notable exceptions, British plant is frequently insecurely packed and no instructions are given for assembling the broken fragments. They have never obtained the least practical information from firms who advertise research laboratories, and offer to design plant, where anything slightly out of the ordinary is required. The greatest handicap which they experience, however, is the refusal of most firms to supply price lists. A great deal of the work of the Institute consists in drawing up tentative rough estimates. For this purpose some idea must be obtained of the cost of the plant so that a decision may be arrived at on the merits of one type of plant as compared with another. The only course possible at present is to draw up a more or less complete scheme for each type of plant and write for estimates. This gives home makers a good deal of trouble, especially as the Institute are not likely to place an order for the plant for a year or two and in most cases not at all. If approximate prices for a few typical pieces of plant could be obtained, this would suffice, but requests for such information are met with the reply that the exact specification should be given. Catalogues are carefully collected at the Institute, but most of them are of little value in the absence of prices. I mention all these facts in detail as I understand that experience with American firms in these matters has been far more satisfactory. I would strongly urge British makers of research laboratory equipment and plant for chemical processes to place themselves in direct touch with the Director, Indian Institute of Science, Bangalore, South India.

Drugs Manufacture Committee.—The following particulars have been obtained from the reports of the Committee for 1919-20 and 1920-21.

Work in 1919-20.—The first meeting of the Drugs Manufacture Committee was held on May 20th, 1919, as a result of which Government decided that the Committee should work under the Department of Revenue and Agriculture with the Director-General, Indian Medical Service, as Chairman, and the Assistant Director-General, Indian Medical Service (Stores), as Secretary, both *ex officio*. The Army Department agreed that investigations should be carried out in the laboratories of Medical Store Depôts and the Research Chemist in the Medical Store Depôt, Madras, undertakes the investigation from the chemical standpoint of samples of plants, etc., submitted to him.

It is hoped that in 1921 the Calcutta School of Tropical Medicine will be in a position to undertake the investigation of the therapeutic efficiency of drugs and the standardisation of their active principles. Proposals are also before Government for the establishment of a school of tropical medicine in Bombay. If these proposals mature, it will be possible to have similar investigations carried out in Bombay.

A considerable variety of correspondence was carried on during the year. It appears from the Report of the Government Cinchona Plantations in Bengal that ipecacuanha and digitalis are successfully grown in considerable quantities at Mungpoo. Lycopodium occurs naturally on the plantations and the spores have been collected and supplied to the Medical Store Department and to a private firm. Some difficulty has been experienced in growing chenopodium and belladonna. Experiments are in progress with other medicinal plants.

Although much remains to be done before the resources of India are fully utilised in the production of drugs, the following list of articles of which Government requirements are wholly or in part derived from Indian sources shows that some progress has been made. Many of these have been made in India only since the beginning of the war, and many are prepared in the factories of Government Medical Store Depôts.

Absolute alcohol.
Acids (hydrochloric, nitric and sulphuric).
Alum.
Ammonia.
Argenti nitras.
Caffeine.
Calcium carbonate.
,, chloride.
,, phosphate.
Castor oil.
Collodion.
French chalk.
Glucose.
Keratine solution.
Lysol.
Magnesium carbonate.
,, sulphate.
Morphia.
Oleic acid.
Oils of aniseed, dill, cloves, carraway, cedarwood, chaulmoogra croton, sandalwood, theobroma, eucalyptus and turpentine.
Pharmaceutical preparations of aloes, asafœtida, belladonna, benzom, cinchona, colocynth, digitalis, hyoscyamus, Indian hemp, liquorice, nux vomica, opium and squills.
Plaster of Paris.
Potassium carbonate.

Prepared chalk.
Pyroxylin.
Rectified spirit.
Soft soap.
Sodium arsenite.
,, carbonate.
,, chloride, chemically pure.
,, nitrate.
Sodium phosphate.
,, sulphate.
Starch.
Sulphate of iron.
Talc.
Tannic acid.
Thymol.

For further information, I would refer readers to the Report of the Proceedings of the Drugs Manufacture Committee for the year ending May 18th, 1920, which is given in Appendix H, page .

Work in 1920-21.—The second meeting of the Drugs Manufacture Committee was held on May 18th, 1920. During the year Captain McCulloch, Advisory Chemist of the Madras Medical Store Depôt proceeded to England on deputation to select machinery and apparatus for medical store depôts. Until this machinery is received from England and erected in medical store depôts, the progress in the manufacture of new preparations will be necessarily slow. Detailed information with regard to the year's work will be found in the Report of the Secretary of the Drug Manufacture Committee for the year ending 31st March, 1921, which can be consulted on application at the Department of Overseas Trade. An interesting report on India's Natural Resources for Drugs, compiled by the officiating Director, Geological Survey of India, is given in Appendix V., p. 251.

Miscellaneous Research. Centres and Demonstration Factories.—A considerable amount of progress has been made in the various provinces under the stimulus of local directors of industry in establishing pioneer and demonstration factories and practical research institutions. Thus, a tanning research institute with a demonstration boot factory attached to it has been started at Calcutta. Unfortunately no funds can yet be made available for the construction of the necessary buildings, but the Government of India are proceeding with the scheme and Sir Henry Ledgard is now in England obtaining estimates of plant and machinery and looking out for a suitable Principal to organise the institutions. In the Punjab administrative approval has been obtained for the establishment of a boot demonstration factory either at Lahore or Amritsar, and of a dyeing factory at Lahore. The object of the dyeing factory is to provide instruction in the use of chemical dyes and to experiment with vegetable dyes. A demonstration glue factory has recently been established in Madras. Other prominent examples are the demonstration pottery factory in Bombay; the pencil factory, aluminium works, soap works, and the jam and pickle factory in Madras, and a tanning school at Nagpur in the Central Provinces.

CHAPTER III.

GENERAL SURVEY OF INDUSTRIAL CONDITIONS IN INDIA WITH SOME ACCOUNT OF GOVERNMENT ACTIVITIES IN STIMULATING INDUSTRY.

General Remarks.—In my last report, the development of Indian Industries was treated in such great detail that I would refer my readers to the information there given for particulars with regard to each manufacturing industry and for a general consideration of the factors which should influence British manufacturers in deciding whether or not to erect works in the country. In the present Review I propose to deal with the conditions obtaining during the past two years and with some of the difficulties, such as labour problems, which have become more acute during the period. The year 1919 was, on the whole, a year of unprecedented prosperity, and the industrial boom, referred to in my previous report, continued in full force until well into 1920. Indian industries generally were fully engaged at highly remunerative rates, the foreign demand for Indian produce was strong and as a result of a favourable balance of trade amounting to no less than Rs.76.73 crores—say £76,000,000 (as compared with a corresponding balance of Rs. 18 crores in 1918-19) exchange rose to unexpected heights, Reverse Council Bills in London being sold at $2/10\frac{27}{32}$ in February, 1920. The high exchange, however, synchronising, with an unprecedented volume of demand for imports, which had accumulated, both during and immediately after the war, resulted in the purchase of enormous quantities of manufactured goods in the United Kingdom, United States and elsewhere, Indian markets are now glutted with stocks, and traders have been faced with a very difficult financial position. Moreover, the failure of Central Europe to recover from the economic collapse brought about by the war, and the general depression and financial stringency in the United Kingdom and the United States brought about a complete cessation of demand for Indian produce. Stocks had accumulated in the consuming markets, the off-take was negligible, and the Indian export trade is at present experiencing a spell of almost unparalleled depression. All these factors have tended to depress local industries. The increase in the import of manufactured goods at relatively low rupee prices, due to the exchange, has forced a few industries, which were floated during the war, and were based mainly on a continuance of high values, to reduce their prices to an unworkable level, and many of them are already in financial difficulties. On the other hand, the lack of demand overseas for such articles as hides and skins has seriously affected the tanning industry. In the case of jute, the mills are now working only four days per week, and even so find it difficult to dispose of their stocks. The tea and rubber industries have probably been the hardest hit of all. Engineering industries have suffered from the rigid cutting-down of extensions and new schemes due to the depression and consequent need for economy. The coal trade has been

seriously effected by labour troubles and reduced output combined with a serious shortage of rolling stock, and although the supply of coal cannot keep pace with the demand, conditions are not so satisfactory as might be expected, and the coal boom, which is expected on all hands, is still deferred. The cotton and steel industries have fortunately been able to hold their own fairly well, and both 1919 and 1920 were years of great prosperity. There are signs, however, that even in these cases, demand is beginning to fall away. The Bombay cotton mills have recently been making to stock for the first time, and are seriously feeling the effect of the dumping of Japanese cloths. The Tata Steel Works are still well-engaged, but with the import of Belgian steel bars and sections at very low prices, it is doubtful whether the rates obtained for their output will be as remunerative in future.

The financial stringency has also seriously affected many concerns. It has been a very general practice in India, in the case of new companies floated during the past three years, only to call up a relatively small portion of their capital on allotment and to rely on further calls on the shareholders when occasion arose. In many cases during the past year the work of such companies has been crippled by their not being able to make the calls required owing to the knowledge that money was so tight, and credit so restricted that a great many of the shareholders could not possibly take up their calls.

On the whole, Indian industries have stood the strain fairly well. The number of liquidations have been, comparatively speaking, few, and have been mainly confined to companies which had little chance of success from their flotation. It is somewhat early to write with authority, as we are still in the throes of the depression which would appear to be a lengthy one, but there is ground for hope that the great majority of the sound new concerns will weather the storm, that the recent severe setback will be found to have been merely a temporary one, and that—after some pruning of the less sound and efficiently-managed companies—the majority of the new industries will go ahead with profit to themselves and great advantage to the country as a whole.

We will now deal briefly with the present financial position and standing of each of the leading industries.

Conditions in the Indian Cotton Industry.

General Prosperity.—During the past two years—in fact, ever since the outbreak of war—there has been unparalleled prosperity in the Indian cotton industry, both in Bombay and Ahmedabad and also in Cawnpore, Madras and other centres. Despite a succession of labour troubles during the past two years, profits have been considerable and the mills have attained a wonderfully strong financial position.

In the issue of " Capital " for May 26th, 1921, will be found a complete record of the position of practically every mill in India, and showing the capital, resources, debentures,

block accounts, share quotations and the dividends paid during the past seven years. An analysis of the dividends paid by 58 leading Bombay mills in 1919 shows an average rate of distribution of 44 per cent. The shares stand at high levels compared with present dividends which goes to show that the prolonged prosperity of the industry is confidently expected. The work on the mills floated during the past two years has been very much delayed owing to the long deliveries required for textile machinery. The bulk of the plant has now been delivered and most of the new factories should be working within a year. The new mills will be handicapped owing to their relatively high capitalisation on account of the increased cost of buildings and machinery, but in a great many cases bleaching and dyeing plants are being laid down, and it would appear that they are hoping to specialise on the weaving of better qualities of fabrics which are usually more remunerative.

Wages.—Official tables, compiled by the Director of Statistics, showing for each year, from 1895 to 1921 (1) the monthly wages in a cotton mill at Cawnpore, (2) the average monthly wages of each type of operative at the Manockjee Petit Cotton Mills in Bombay, and (3) the daily wages of each type of operative in one of Messrs. Binny & Co.'s mills in Madras, are in the possession of the Department of Overseas Trade. They show that there has been an all-round advance of fully 100 per cent. on the wages paid in 1913, whereas in a recent statement compiled by the Director of Labour, Bombay, he estimates the average increase in the cost of living in India in December, 1920, to be 81 per cent. above July, 1914. It is worth noting that the greater portion of the increases in wages were obtained in 1920 as a result of one prolonged strike and many threats of strikes in the Bombay Mills.

Hours.—The present hours of labour worked in the cotton mills in India are 10 per diem. Some scepticism was expressed early in 1920, when the shortened hours were decided upon in Bombay following upon the recommendations of the International Labour Conference at Washington, that they would prove to be disastrous to the industry. Needless to say, this has not been the case. The Bombay Millowners' Association would have preferred two shifts of eight hours each, but owing to the acute shortage in housing accommodation, the insufficient water supply, and the general shortage of labour, this was not found to be practicable. In the Bill for the Amendment of the Indian Factories Act, 1911, which is to be brought before the Councils in September, it is proposed that: (1) No person shall be employed in any factory for more than 60 hours in any one week; (2) No person shall be employed in any factory on a Sunday; (3) There shall be fixed for each person employed on each working day at intervals not exceeding six hours, periods of rest of not less than one hour, and for each child working more than five hours in any day, a period of rest not less than half-an-hour; (4)

The age at which a child shall be considered to be an adult is raised from 14 to 15 years; (5) The age at which a child shall be admitted to industrial employment is raised from 9 to 12; and (6) the atmosphere shall not be rendered so humid by artificial means as to be injurious to the health of the persons employed therein. It is expected that the new Factory Act will be passed without serious alteration.

Housing and Welfare Conditions.—Conditions vary in different parts of India. The welfare schemes at the Buckingham and Carnatic Mills in Madras are admirable, and would bear comparison with any mill in the world. Conditions in Cawnpore also, both as regards housing and general welfare, are quite good. Bombay is exceptional on account of the lack of space. Here, as is well known, the mill-hands live in chawls, *i.e.*, buildings several storeys high, divided into a number of single-room units, where usually gross overcrowding exists. This congestion has intensified the effects of plague, and is accompanied with insanitary and unhealthy conditions generally. The whole question was taken in hand in 1920 by the Government of Bombay, under the forceful leadership of His Excellency Sir George Lloyd. A Development Loan of over 9 crores of rupees, bearing 6½ per cent. interest, free of Income Tax, was floated in September and October, 1920, and of this the mills contributed between 3½ and 4 crores. A Development Department was created with Sir H. A. L. Hepper as Director, and an extensive housing, reclamation and general improvement programme was embarked on. An industrial housing scheme involving the erection of 50,000 one-roomed tenements for the working classes in Bombay is already well in hand, and within the next two or three years conditions should be considerably improved. General welfare work is of very recent growth. A definite educational programme has now been laid down by the Government of Bombay and the Municipality. Co-operative credit societies and debt redemption societies are on the increase and are meeting with success. Some mills provide cheap grain and clothing. The most hopeful sign is that the millowners are recognising that they have a responsibility towards their operatives, and are following the strong lead given by the Local Government.

Statistics of the Industry.—The number of spindles in all India at the end of 1920 was 6,763,076, as compared with 60,079,394 in the United Kingdom. The number of looms was 119,012, compared with 798,083 in the United Kingdom. In Appendix IX. (C, D, E), pages 268-270, will be found tables abstracted from the 1920 report of the Bombay Millowners Association showing :—

(1) The number of mills, spindles and looms, the average numbers of hands employed daily, and the approximate quantity of cotton consumed in all India during each of the past 24 years.

(2) A comparative statement of the cotton consumption, yarn and cloth production over a series of years.

(3) The number of pounds of yarn produced in India per spindle in position, which is a fairly good index of the steadiness with which the spindles have been worked, and the prosperity or depression of the industry.

It is interesting to note that although there has been a steady increase in the production of yarn during the past three years, the amount of raw cotton consumed has steadily been reduced. *This would appear to be a clear proof that the mills are tending to spin finer counts.* The figures are as follows :—

——	1918-19.	1919-20.	1920-21.
Total production of yarn lbs.	615,040,464	635,760,273	660,002,597
Cotton consumed ... cwt.	7,299,873	7,154,805	6,833,113
Pounds of Yarn per spindle lbs.	99·27	91·93	94·00

The Jute Industry.—The period of phenomenal prosperity during the war placed the Indian jute mills in an impregnable position, and although they are feeling the present depression to some extent, it is recognised that it is likely to be only a temporary phase and that the prospects for this great industry are as bright as ever. In the issue of " Capital " for May 19th, 1921, will be found a list of the mills and the essential facts with regard to each. The reserve funds in almost every case exceed the capital, and the shares are fairly high despite the present state of the money market.

The Tea Industry.—The tea industry is going through a period of acute depression. The elimination of Russia and Central Europe, both large buyers of Indian tea, and the accumulation of stocks in London and other markets, has necessitated the production being sold at very heavy losses in many cases. Managing agents are now more hopeful that the worst of the depression is past, but the recovery will probably be a slow one. In the issue of May 26th, 1921, of " Capital " there is a list of particulars relating to the principal companies.

The Coal Industry.—The problem of the coal supply is becoming most serious. At the present time, the raisings, which in 1919 amounted to 22,628,000* tons, are not sufficient for the requirements of the country even since the embargo was placed on exports of coal. Many factors contribute to this unfortunate position. The supply of labour in the fields is always more or less inadequate, and now that increased rates of pay are being given,

* (From " Report on Production and Consumption of Coal in India, 1919.")

it is understood that the output has declined, as the miners work fewer days per week. Transport has been a further difficulty, the number of wagons being frequently short, and also in some places the sidings accommodation is inadequate. Until recently, mechanical coal-cutters have proved unsuccessful, but the machines recently introduced are, it is understood, better suited to Indian conditions. The leading companies are now making serious attempts to introduce coal-cutters and mechanical labour-saving devices of all kinds in order to overcome their labour difficulties. It is generally agreed that there is a great future before the Indian coal industry, and this explains the fact that in the case of most companies, the shares stand at a relatively high level. In the same issue of " Capital " is given the weekly list of coal companies, from which the position of each individual concern may be seen at a glance.

Flour Mills.—The old-established flour mills have had a period of great prosperity during the past three years, and there is undoubtedly a bright future before this industry, particularly in those instances where the machinery and plant was purchased before the recent rise in values. An analysis of the dividends of the eight leading mills in 1920 shows an average distribution of over 42½ per cent. The mills have large reserve funds, and are generally in a very strong financial position.

Paper Mills.—After a somewhat chequered career and after surmounting many difficulties the few paper mills in India are now enjoying a period of prosperity, and with the growth of the bamboo pulp-making industry in the country an extension of paper manufacture in India would appear to be inevitable.

The Tata Iron and Steel Company, Ltd.—A very complete description of the Tata Iron and Steel Works at Jamshedpur was given in my last report, page 140. The Department of Overseas Trade has received a copy of the report of the directors for the year ended 31st March, 1921, which enumerates the following distribution of shares :—

First Preference Shares ...	6	per cent. per annum.
Second Preference Shares ...	7½	,, ,,
Ordinary Shares	16	,, ,,
Deferred Shares	202	,, ,,

The Directors state that " the original scheme for the greater extensions provided for two blast furnaces, one duplex (steel) furnace, a plate mill, a continuous sheet bar and billet mill, sheet mills and a merchant mill with their requisite miscellaneous equipment. The original plan has undergone many alterations and additions. In 1917-18 the scheme was enlarged considerably. In 1917 one additional blast furnace (the Batelle furnace) was purchased, and it has been in operation since August, 1919; a blooming mill, a rail and structural mill and a second Duplex furnace were added; the capacity of the plate mill was increased; and substantial additions were made to the continuous sheet bar and billet

mill, the sheet mills, and the merchant mill as a result of improvements in design and with the object of increasing their capacity. In order to provide the raw materials required for the increased production the company has made large additions to its reserves of coal, ore, and fluxes, and now has in sight and under its own control fully adequate supplies for the near future. The development of the towns has naturally kept pace with this expansion, and in 1918 the company obtained an additional 20 square miles of land to provide for the suitable housing of its workmen and for the subsidiary industries which will eventually be grouped round the steel works. This is the scheme for the greater extensions as it stands at present.

"The production of finished products available for sale for the past year was 88,990 tons of pig iron and 120,570 tons of finished steel. When the entire scheme given above is carried through the production available for sale will be 174,000 tons of pig iron and 425,000 tons of finished steel. It is not possible to say definitely in what exact shape this material will be put upon the market. The new plant, when completed, will have a large reserve of rolling power and our steel will be diverted from one mill to another in accordance with the fluctuations of the market and the competition which enters it. But we expect to work up to this production within four years. All such estimates of future production must necessarily depend upon many circumstances, which in the present state of the world no man can forecast with absolute certainty. We estimated that the original scheme for the Extensions would be completed by July, 1921. Since that estimate was made the whole scheme has been enlarged, the design has been improved, and many additions have been made owing to alterations in practice which have been discovered since the original plans were laid. The site has also been changed. These alterations have been made on the best expert advice and will undoubtedly tend to greater economy in working. They have, however, inevitably delayed the completion of the scheme. Our progress has also been delayed by many factors which could not have been foreseen; by restrictions imposed by the various Governments upon manufacture and shipment both during and after the war; by the prevailing unrest and continual strikes which have occurred both in Europe and America; by the shortage of ocean freight and railway transport; by the difficulty of obtaining labour and materials in India; by the congestion of the port of Calcutta; and by many other causes which have followed directly and indirectly from the war and which have been entirely outside our control. The constant fluctuations in exchange and prices have also materially affected the prices which we have had to pay. In spite of all these difficulties the Batelle Furnace is actually in operation, the plate mill is practically complete, and two more blast furnaces and one Duplex furnace will be ready to operate in 1922.

"We are now, however, faced with the very serious position regarding the railway transport to which the attention of the Indian public has been drawn in the last few months by the

evidence given before the Railway Committee. We have repeatedly pressed this upon the attention of the railways and Government, and although the B.-N. Railway has made certain additions to its equipment and has done all it can to help in this direction, the additions are not adequate to handle the traffic which we shall require when the extensions are in full operation. The directors have considered and are considering the effect of this restricted development upon the progress of the Greater Extensions and will retard these if it appears likely that the railways will not be able to handle the raw materials and finished products as it would be no advantage to the Steel Company to erect plant that would stand idle for want of railway facilities. But they are pressing, and will continue to press, that the development of the lines serving the works should coincide with our expansion, and we had recently offered to arrange for a loan of four crores of rupees to the B.-N. Railway in order to ensure this."

In my last report mention was made of some seventeen subsidiary industries which it was hoped to establish in the vicinity of Jamshedpur in order to take advantage of the close proximity of the steel works, from which the raw materials required would be furnished. The Directors now state that " not much progress has been made by the subsidiary companies with whom we have been negotiating for the development of subordinate industries depending on our works for the supply of raw materials. One subsidiary, the Calcutta Monifieth Works, has started the manufacture of jute mill machinery, but the progress of the others has been delayed by the unusual circumstances of the past year. Capital cannot at present be easily raised, and the increased cost of machinery and plant from abroad has delayed the completion of their projects. In some cases the schemes which were under consideration have been definitely abandoned. These include the Burma Corporation project for the smelting of zinc, and our negotiations with the Eastern Chemical Company, Messrs. Stewarts & Lloyds, Messrs. Vickers, and Messrs. Jessop & Co., Ltd. We are, however, still negotiating for the establishment of plants for the manufacture of railway wagons and locomotives, agricultural implements, wire products, tin plates, enamelled ironware, cables and special steel for reinforcement. We have every reason to expect that these and other manufactures will ultimately be established at Jamshedpur and will use our steel in ever increasing quantities as the industrial development of the country grows. But for the present we do regret a certain limitation of our commitments for the supply of material at special prices."

The Bengal Iron Co., Ltd.—The production of this concern in 1919 amounted to 84,965 tons of pig iron, 4,732 tons of ferro-manganese, and 29,635 tons of iron castings. Numerous labour troubles occurred during 1920, but an amicable arrangement has now been arrived at and work is proceeding smoothly. The Company has largely specialised on castings and the works contain a large foundry, making pipes up to 12 inches in diameter, bends, columns, fencing sockets, pot sleepers and chains; and

another foundry capable of producing castings up to 20 tons in weight.

The Indian Iron and Steel Co., Ltd.—Work in the erection of the blast furnaces has proceeded steadily on the Company's site at Asansol, and the first furnace should be ready very shortly.

Other Iron and Steel Companies.—The details of two other large iron and steel projects are now being worked out. The raw materials have been secured, and it would appear to be merely a matter of time before the companies are launched. The present state of the world's money markets is acting as a temporary check on the flotation of large enterprises of this nature, but the preliminaries are being actively proceeded with.

Engineering Industries.—The old-established firms of engineers have continued to do well during the period, although they have suffered a great deal from labour troubles. The new firms, however, are finding conditions more difficult. Great delays have been experienced in obtaining plant and machinery from the United Kingdom and America, tightness of money and restriction of credit has been a source of embarrassment, and the prevalent depression in trade has affected the demand for their manufactures in those cases where they have reached the producing stage. Moreover, the enormous imports from overseas have made competition much keener. It is little wonder then that the shares of many of these concerns stand at a discount and their immediate prospects are not bright.

Miscellaneous.—In "Capital" for June 2nd, 1921, will be found a table showing the position of the many miscellaneous companies which were formed during the company-promoting boom of 1919-1920. For further information with regard to each concern I would refer to the Investor's Indian Year Book, 1920, published by Messrs. Place, Siddons & Gough, Stock and Share Brokers, 1, Commercial Buildings, Calcutta.

List of Industrial Establishments in India.—The latest available information is contained in the 1920 edition of the compilation "Large Industrial Establishments in India," issued by the Director of Statistics. From this has been taken the following statement showing the number of establishments belonging to, and the aggregate number of persons employed in, the principal industries arranged in order of importance in respect of the number of persons employed. Industries employing less than 5,000 persons in the aggregate have been lumped together under "others."

Class of industry.	Owned by Government, Local Bodies, or State Darbars.		Owned by Companies or Individuals.		Total.	
	Number of establishments.	Number of persons.	Number of establishments.	Number of persons.	Number of establishments.	Number of persons.
Cotton spinning and weaving mills (*a*)	3	1,585	281	280,712	284	282,297
Jute mills	1	595	74	263,778	75	264,373
Cotton ginning and pressing factories...	2	768	1,773	132,555	1,775	133,323
Railway and tramway workshops ...	20	34,855	77	80,674	97	115,529
Rice mills	—	—	542	47,114	542	47,114
Engineering workshops (*b*)	25	5,459	136	33,653	161	39,112
Arms and ammunition (*c*)	17	33,287	—	—	17	33,287
Printing presses	35	13,507	113	17,231	148	30,738
Tanneries and leather works	4	3,962	330	24,248	334	28,210
Jute presses	—	—	125	25,504	125	25,504
Tile and brick factories	1	72	181	23,124	182	23,196
Dockyards and Port Trust workshops (*d*)	6	9,599	9	13,432	15	23,031
Iron and steel producing works ...	—	—	2	17,145	2	17,145
Saw mills	1	150	126	11,522	127	11,672
Petroleum refineries	—	—	7	11,556	7	11,556
Woollen mills (*e*)	3	274	17	10,878	20	11,152
Sugar factories	—	—	40	9,847	40	9,847
Stone works	—	—	48	8,932	48	8,932
Oil mills	—	—	138	7,757	138	7,757
Kerosene tinning and packing works ...	—	—	23	6,290	23	6,290
Tobacco factories	—	—	14	5,901	14	5,901
Paper mills	—	—	8	5,407	8	5,407
Lac factories	—	—	59	5,324	59	5,324
Rubber works	—	—	12	5,085	12	5,085
Others	60	14,631	514	71,997	574	86,628
Total	178	118,744	4,649	1,119,726	4,827	1,238,410

(*a*) Including weaving establishments not classed as mills.
(*b*) Including electrical engineering workshops, shipbuilding and engineering works, iron and brass foundries, and canal foundries and workshops.
(*c*) Including arsenals, gun carriage factory, sappers' and miners' workshop, aircraft works, and mechanical transport repair works.
(*d*) Including harbour works.
(*e*) Including woollen carpet and shawl weaving establishments.

Cotton spinning and weaving mills employ the largest number of operatives (over 282,000), closely followed by jute mills with over 264,000 operatives. The largest number of establishments, namely, 1,775 or 37 per cent. of the total, belong to the cotton ginning and pressing industry.

Provincial details in respect of the principal industrial establishments owned by companies and individuals are given below. The information refers to the end of the calendar year 1917.

Of the 282 cotton mills (including cotton spinning and weaving establishments not classed as mills), 184 are in the Bombay Presidency, with an aggregate number of 194,115 operatives, or 69 per cent. of the total. Madras comes next with 26 mills and 24,881 persons. The United Provinces contain 18 mills with 15,725 persons, the Central Provinces and Berar 14 mills with 15,530 persons, and Bengal 12 mills with 10,818 persons.

Almost all the jute mills (70 out of 74) lie in Bengal, with 260,787 operatives or 99 per cent. of the total. Of the remaining

four mills three are in Madras employing 2,594 persons and one in the United Provinces with 397 operatives.

There are in Bombay 521 cotton ginning and pressing mills employing 39,014 persons. In the Central Provinces and Berar there are 426 mills with 27,660 persons, in the United Provinces 156 mills with 14,214 persons, in Madras 149 mills with 12,915 persons, in the Punjab 120 mills with 7,728 persons, in Central India 107 mills with 8,563 persons, in the State of Hyderabad 147 mills with 8,152 persons, and in Baroda 83 mills with 6,260 persons.

The majority of rice mills are in Burma (319 mills with 34,806 persons) and in Madras (130 mills with 8,668 persons). There are in Bengal 62 mills with 2,706 operatives.

The largest number of engineering workshops (including iron and brass foundries and shipbuilding works) is in Bengal (74 factories with 15,840 persons). Other important provinces stand thus in order of importance—Bombay (20 factories with 5,387 persons), Bihar and Orissa (7 factories with 5,278 persons), the United Provinces (7 factories with 1,610 operatives), and Madras (9 factories with 1,394 persons).

There are two iron and steel producing works, one in Bihar and Orissa employing 10,775 persons, and the other in Bengal with 6,370 operatives.

Of 113 printing presses with 17,231 persons employed, Bengal accounts for 21 with 3,604 persons, Bombay 27 with 4,646 persons, Madras 29 with 4,118 persons, and the United Provinces 11 with 1,886 persons.

Tanneries and leather works exist mainly in Madras (267 factories with 14,544 persons), the United Provinces (9 factories with 5,818 persons), Bombay (24 factories with 2,211 persons), and Bengal (16 factories with 775 persons).

Of the 125 jute presses, 117 are in Bengal, and these employ 24,848 persons. Of the remaining eight presses, four are in Bihar and Orissa with 454 persons, and the other four in Madras with 202 persons.

Tile and brick factories are to be found mainly in Bengal (78 factories with 8,955 persons), Madras (31 factories with 6,915 persons), the United Provinces (19 factories with 2,012 persons), Bombay (13 factories with 1,426 operatives), and the Punjab (21 factories with 1,390 persons).

The home of the saw mill industry is Burma, which possesses 107 mills employing 8,656 persons. Other principal provinces having saw mills are Assam (8 mills with 1,244 persons), Madras (5 mills with 933 persons), and Bombay (2 mills with 391 persons).

Petroleum refineries are confined to the two petroleum-producing provinces of Burma and Assam, Burma having 6 refineries with 10,793 persons and Assam 1 with 763 persons.

Of the woollen mills (including carpet and shawl weaving establishments not classed as mills), 2 employing 3,517 persons are in the United Provinces, 6 with 3,425 persons are in the Punjab, and 6 with 2,166 persons are in the Kashmir State.

Sugar factories are confined chiefly to the three provinces of Madras, Bihar and Orissa, and the United Provinces. Madras has 10 factories with 3,540 persons, Bihar and Orissa 15 factories with 3,043 persons, and the United Provinces 8 factories with 2,088 persons.

Of the 14 tobacco factories, 3 are in Bihar and Orissa with 2,392 persons, 1 in Bangalore with 1,220 persons, 6 in Bengal with 1,133 persons, and 3 in Madras with 1,090 persons.

Company Flotations.—It is now possible to survey the effects of the great company-promoting boom of 1919 and 1920 in the number of registrations of limited liability companies. As I stated in my last report, one of the most encouraging features of the past few years has been the readiness of Indian capital to subscribe to new industrial ventures, provided that there is confidence in the names of the promoters and managing agents. As is usual in booms of this kind, a certain number of companies were floated on very shallow foundations and with slight prospects of ultimate success. These are now being drastically weeded out in the present period of depression, and the country is better without them. On the whole, however, the great bulk of the new companies were based on sound economic prospects, and although they are having to mark-time at present, there seems no reason why they should not ultimately be most useful concerns. Quotations during the years 1919 and early 1920 rose to absurd levels, but there has been a great slump since, and the shares of most industrial companies to-day are quoted at fair market values.

The following statement shows the trend of registration in recent years :—

Year.	No. of companies.	Index number (pre-war year = 100.)	Aggregate authorised capital.	Index number (pre-war year = 100).	Average authorised capital per company
			Rs.		Rs.
1913–14 (pre-war)	356	100	66,91,53,000	100	18,79,000
1914–15	112	31	4,43,20,000	7	3,96,000
1915–16	131	37	7,20,49,000	11	5,50,000
1916–17	184	52	17,25,91,000	26	9,38,000
1917–18	276	78	32,20,55,000	48	11,67,000
1918–19	290	81	21,27,55,000	32	7,34,000
1919–20	905	254	2,75,53,47,000	412	30,44,000
1920–21	965	271	1,45,76,67,000	218	15,11,000

The two boom years stand out with great prominence. In 1919-20 no less than 905 companies were registered with an aggregate

authorised capital of £275,534,700,* and an average authorised capital per company of £304,400. The number of registrations increased to 965 in the following year, but the capital figures declined to an aggregate of £145,766,700, giving an average of £151,100. The most noticeable decreases are under insurance (−£58,000,000), navigation (−£19,000,000), mills for wool, silk, hemp, &c. (−£6,000,000), cotton and jute mills (−£4,000,000 each), and tea (−£2,000,000). On the other hand, there are notable increases under sugar manufacture (+£6,000,000), railways and tramways (+£4,000,000), and rice mills (+£2,000,000). The boom has now spent itself and, as may be expected with the present monetary stringency throughout the world, very few new flotations are being made, and these are principally confined to private registrations where the money is subscribed by the promoters. In Appendix VI., page 256, will be found an abstract statement showing the main branches of economic activity covered by the flotations over a period of the past four years, and also the last pre-war year. It will be observed that during the height of the boom in 1919/20, the number of registrations in Bombay was less than half the number in Bengal, but the aggregate capital represented by Bombay was greater than Bengal. This is accounted for by the fact that several of the new Bombay companies were connected with shipping, banking and insurance, which require heavy capitalisation, whereas the majority of the Bengal registrations represented industrial and trading ventures requiring less capital in each case.

Prices of Securities and Shares.—The following table, compiled by the Director of Statistics, gives the index numbers of prices of securities and shares, taking the price on the 29th July, 1914, as 100. It will be noted that Government Securities, and Port Trust and Municipal Debentures show a decided fall, while, on the other hand, banking, industrial and trading stocks show a marked advance.

	29th July, 1914.	26th July, 1917.	26th March, 1918.	27th March, 1919.	31st March, 1920.
5 Government Securities ...	100	70	67	74	62
100 Port Trust and Municipal Debentures.	100	89	84	84	81
10 Banks	100	106	112	116	137
32 Jute Mills (ordinary) ...	100	311	467	383	563
65 Cotton Mills (ordinary) ...	100	132	162	157	386
80 Coal Companies (ordinary)	100	136	134	157	149
1 Woollen Mill (Cawnpore ordinary).	100	106	125	125	187
87 Tea Companies (ordinary)	100	127	125	123	136
4 Flour Mills	100	137	206	238	406
1 Iron and Steel Company (Tata-ordinary).	100	332	295	284	207

* The exchange rate Rs. 10 = £1 used in calculating these figures was not maintained after September, 1920.

Labour Conditions.—The year 1920 was marked by an unprecedented state of general labour unrest with a series of strikes in almost every industry. The causes of this state of affairs were partly economic and partly political. There appears to be little doubt that the high cost of living had been pressing heavily for some time on industrial labour in India, whose remuneration had not been increased to keep pace with the advance in the prices of necessities. As this class, even before the war, had practically no margin after meeting the barest necessities (comforts in the Western sense of the term are unknown among them), it naturally follows that they were in a state of mind which only too readily accepted the exhortations of the travelling agitator. It is significant that this period of labour unrest coincided with the progress of the non-co-operation movement inaugurated by Mr. Gandhi, but it is difficult to state to what extent it was influenced by it. The main grounds for the unrest in India were undoubtedly economic, but it is doubtful whether the movement would have been so widespread had it not been for various agitators, whose aims were mainly political, and who fanned the embers of discontent into direct action and strikes. The following description of the state of affairs in Bengal, culled from a report by the Director of Industries, admirably expresses the state of affairs in that Presidency.

> " An epidemic of strikes unprecedented in the history of the province broke out in Bengal in the year 1920. With extremely few exceptions, the strikes arose from demands for higher wages; and the general origin of the demands was the rise in the cost of living which resulted from the Great War. The popular hope that the Armistice would be followed by a substantial fall in prices was grievously disappointed; apart from economic reasons there were others that unsettled men's views of established things, and the general atmosphere was one that encouraged the not unnatural demand of industrial labour that some readjustment should be effected. The workpeople of Bengal are almost exclusively immigrants from other provinces who retain their foreign domicile and reside in bachelor messes in the immediate neighbourhood of their work. They work in two main groups, viz., the major group that lines the banks of the river Hooghly in the vicinity of Calcutta, and the minor group that is stationed in and near the coalfields of Asansol. The chief labour elements lying outside these groups are the quasi-agricultural labour of the tea gardens and the labour employed on the railways of the province and on the steamers that ply mostly on the waters of Eastern Bengal. Partly through their non-domicile in the province and partly through lack of education, the workmen of Bengal cannot be said to constitute a class in the sense of a social group aware of any corporate personality; and they are unpractised in the organisations that make for the common articulation of

common desires. The strike as a means of obtaining concessions was not unknown before 1920, but it had appeared only in isolated cases, and the demands had more commonly been non-economic in character. What appears to have occurred in 1920 is that isolated strikes for higher wages in the Hooghly riverine, resulting in the concession of increases, were suddenly taken as a pattern of what might well be repeated, and there followed a process of accumulative imitation which gained in strength owing to the continued success achieved. This process was lubricated by public discussion in newspapers and by the active interest which was taken in some strikes by publicists not belonging to the working classes, who began to express on behalf of the men arguments regarding labour which had hitherto been heard more often in Western countries than in India. Up to date, the process of adjustment has been on the whole amicable; the bulk of strikes have been comparatively short-lived, and their conduct has been commendably peaceable. In the course of them several tentative movements in the direction of forming economic labour associations have made their appearance; these are, however, mostly confined to smaller groups of employment such as press-employees, taxi-cab and motor car drivers, tramway employees, Port Trust employees, and do not extend, for instance, to the great jute industry. A notable feature of a one day's strike called by the local branch of the Railway Workmen's Association as Kharagpur in October, was the denouncing of the strike by the Central Association as unauthorised. Members of the legal profession have figured on behalf of the workmen in the settlement of several strikes, but not in the settlement of jute mill strikes."

Strikes occurred in the cotton and jute mills, the engineering shops and the iron and steel works. A prolonged state of unrest in the colliery districts continued throughout 1920 unto the present year. Even the labour on the tea gardens in Assam and elsewhere has been seriously affected. The result has been an all-round advance of wages until they are now—generally speaking—equal to and in some cases are above the increased cost of living. It has been somewhat difficult to arrive at an accurate estimate of labour grievances with regard to wages owing to the absence of close statistical investigation into the cost of living of the Indian working class. This is now being made both by the Central Labour Bureau of the Government of India and also by the labour departments of certain provinces, *e.g.*, Bombay and Madras. The Bombay Government in May, 1921, issued the following statement:—

"For some time past the construction of a new index which would show the change in the cost of living among the working classes in Bombay has been under consideration. Such an index should include articles of food (cereals,

pulses and other articles of food), fuel and lighting, clothing and house rent, and the prices of the various commodities should be combined in proportion to their relative importance in working class expenditure. The statistics below, therefore, have been constructed on these principles and are designed to measure the average increase in the cost of maintaining unchanged the standard of living prevailing just before the war, irrespective of whether or not such a standard was adequate.

These statistics were prepared by the Director of Statistics with the Government of India, and Mr. F. H. McLeod, C.B., Chairman of the Industrial Court, London, and formerly Director of the Department of Labour Statistics, Board of Trade. These were discussed at a Conference in Delhi and referred to an expert Sub-committee which included the Professors of Economics, Madras University, and the Muir Central College, Allahabad. The Government of Bombay has decided, in view of the demand for this index number, not to withhold publication any longer as regards Bombay. In future the index will be published monthly by the Labour Office, Bombay.

The items included in the statistics fall into the following groups :—I. Food (*a*) cereals, (*b*) pulses, (*c*) other articles of food; II. Fuel and lighting; III. Clothing; and IV. House rent. The articles include rice, jowari, bajra, wheat, gram, kulthi, sugar, salt, tea, beef, mutton, milk, ghi, potatoes, onions, coconut oil, kerosene oil, firewood, coal, clothing and house rent, and these have been given their proper relative importance according to the relation which each article bears to the aggregate expenditure. The recent fluctuations are shown in the following summary tables :—

All items: Average percentage increase over July, 1914.

	Per cent.		Per cent.
1919—		1920—	
January	83	August	91
February	77	September	92
		October	93
1920—		November	86
January	82	December	81
February	80		
March	76	1921—	
April	71	January	69
May	73	February	62
June	80	March	60
July	89	April	60

The index number of the cost of living at the end of April, 1921, shows no change as compared with the previous month. There has been a fall as compared with the high water mark reached in October, 1920, of 33 points or 17 per cent.

—	Foodgrains.		Other articles of food.	All food articles.	Fuel and lighting.	Clothing.	House rent.
	Cereals.	Pulses.					
1919—	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
January ...	89	112	71	84	53	189	} 40
February ...	78	122	71	78	50	172	
1920—							
January ...	50	151	115	80	47	206	
February ...	54	146	106	79	47	187	
March ...	50	116	102	73	45	196	
April ...	42	99	99	66	46	199	
May	37	97	113	69	51	185	
June ...	41	94	132	78	50	192	} 65
July	45	84	153	88	51	213	
August ...	44	78	162	90	51	199	
September ...	47	90	163	92	51	199	
October ...	48	97	161	92	58	191	
November ...	48	98	138	84	58	191	
December ...	44	98	127	78	84	184	
1921—							
January ...	31	92	106	62	92	169	
February ...	31	90	88	55	88	151	} 65
March ...	28	86	89	54	76	139	
April ...	31	81	85	53	77	153	

The fall in the cost of living in the last five months has been almost universal throughout the world. In the United Kingdom, for example, the fall has been no less than 35 points or 13 per cent., the latest figure (for March, 1921) being 141 per cent. above the level of July, 1914, as against 60 per cent. in the case of Bombay."

It will be observed that the average percentage increase in April, 1921, over July, 1914, was estimated in Bombay to be 60, whereas the official tables of the wage statistics mentioned on page 55 above show that the wages in the Bombay mills have been increased by roundly 100 per cent. This would indicate, if the estimates are correct, that the position of the Bombay operatives has been improved, and the smoother running of the mills during the last few months gives some ground for this assumption.

Wages of Labour.—I would commend all firms who may be interested to the volume on " Prices and Wages in India," compiled in 1920 by the Indian Department of Statistics and published by the Superintendent of Government Printing, India. Official tables showing the rates of wages paid in each year from 1895 to 1921 for each type of labour employed in selected Indian paper mills, woollen mills, jute mills, breweries, steamship companies, collieries, engineering shops, boot factories, rice mills and tea plantations, and similar statistics with regard to the cotton industry can be consulted at the Department of Overseas Trade.

It is established from these figures that wages generally throughout Indian industry have risen from 60 to 100 per cent., but that the greater portion of the rise was granted in 1920-21 as a result of the unrest already referred to. These statistics also confirm the opinion given in my last report that the tendency of wages for unskilled labour will be to rise very slowly and in more or less direct proportion to the rise in the cost of living. On the other hand, the wages of skilled artisans and experienced foremen may, and probably will, rise to comparatively high rates, as the supply of really skilled workers is limited, and the demand during the next few years will be phenomenal until the new industrial concerns have been working sufficiently long enough to train their own men.

Organisations of Employers and Employed.—Employers and bodies in various industries have hitherto been fairly well organised in order to protect the general interests of their respective industries and to be in a position to voice the needs of their members before Chambers of Commerce or Government. Strong associations with these objects in view have existed for many years such as the Bombay Millowners' Association, the Calcutta Jute Mills Association, the Indian Tea Association and the Indian Mining Association. The need, however, has not been apparent for any form of federation to represent Indian employers as a whole. As a result of the International Labour Conference at Washington in 1919, it was realised that a general body of industrialists who could voice the sentiments of employers of labour throughout India and who could appoint a delegate or delegates to represent them at future international conferences was urgently needed. Largely through the instrumentality of Sir Alexander Murray, the Indian employers' delegate at Washington in 1919, a federation of Indian employers has recently been formed, and one of their first acts was to appoint the delegate to attend the second International Labour Conference to be held at Geneva. This Federation should be of very great value in dealing with future labour questions in India and also in giving expression for the first time to the wishes and opinions of Indian industralists as a whole. The urgently needed movement towards federation also received an impetus by the formation in January, 1920, of the Associated Chambers of Commerce of India and Ceylon, of which two valuable conferences have already been held, and which has done valuable work in breaking down the jealousies and feelings between the various ports and in promoting solidarity of interest and an *esprit-de-corps* as merchants of India.

It is in many ways unfortunate that Indian labour is so far entirely lacking in organised bodies. Trade unions do not exist, nor are there any prominent leaders drawn from the ranks of the workers. The result is that the men are largely swayed by self-appointed political agitators, who frequently play upon their grievances in order to serve their own ends and to embarass the Government. Even travelling religious mendicants are occasionally found to be leading labour movements in certain districts. A very few educated Indian "intellectuals" take an interest in these matters, and it was one of the latter who was

appointed by the Government of India to represent the Indian workers at Washington. The situation is most unsatisfactory, as a whole industry may be disorganised at any time by the entry of a political agitator into the district. It would appear to be in the interests of employers and employed alike that recognised trade unions with properly appointed officials and leaders should be formed in India as soon as possible in order that employers might have responsible bodies with which to negotiate. The difficulties are very great, as the mass of the workers are uneducated and are entirely lacking in corporate feeling. It would appear, therefore, that, at all events for the first few years, the accredited officials of such unions would have to be drawn from outside the industry.

Erection of Branch Works in India.—In my last report I dealt very fully with the general factors which should influence British manufacturers in deciding whether or not to erect works in India. As these factors still apply and deserve very careful consideration, I think it will be of advantage to recapitulate my general conclusions :—

(*a*) In those cases where the principal raw materials are available in India and where the country affords a large steady market for the finished product, the prospects for local manufacture should be promising, particularly where freight charges bear a high proportion to the value of the article, as, for instance, in the case of cement, heavy castings, pipes and tubes, and certain types of constructional steelwork.

(*b*) Where there are established industries in India, requiring large and constant supplies of machinery and parts, and where a special knowledge and study of their requirements is necessary, British makers would probably, other things being equal, be well advised carefully to consider the question of local manufacture. I would instance cotton and jute mill machinery, tea and rubber machinery, rice and oil mill plants, machine tools, agricultural and hand tools, and supplies for the textile and tea industries such as three-ply chests, pickers, bobbins, &c., &c.

(*c*) In those cases, where there is a steady demand for standardised and simple types of heavy plant for Government, railway or municipal requirements, and where the raw material is available, local manufacture would probably be successful. In particular, I have in mind locomotives, wagons, light railway rolling stock and material, waterworks plant, and possibly certain smaller kinds of pumps. Of course, it may only be economical to manufacture certain sections and to import the remainder which would then be assembled at the Indian works. In this category, skilled labour will probably be the greatest difficulty.

(*d*) Even where actual manufacturing is not carried on in the country, assembling depots, repair shops and spare parts stores should be erected in the case of suitable articles such as motor-cars, lorries, &c., and articles in

common use among the people, such as sewing machines. Fine chemicals such as dye-stuffs should be imported in bulk, and then be reduced in strength to the requirements of the market, tinned and labelled in India.

(*e*) A most important factor to be considered is the risk that if British manufacturers do not take advantage of such industrial opportunities as India presents, our foreign competitors may do so, and thereby undersell our imported goods in the market. The Japanese have recently made several endeavours to secure a footing in Indian industries, but so far without much success, while one or two American manufacturing firms are merely awaiting their opportunity.

(*f*) While makers may find it economical to manufacture articles in India for consumption in the country, it should be pointed out that India is not a good centre from which to distribute to other markets, except possibly to Burma, Persian Gulf ports, and East Africa. Shipping freights for coastal traffic are high, and a great deal will depend whether the outward freight rates from European ports revert to anything approaching to their pre-war level. Before the war it was possible to ship fine cargo, such as textiles, soap, &c., from Liverpool to Rangoon at a lower rate than was charged between Calcutta and Rangoon, and a similar state of affairs prevailed as between Liverpool and Gulf ports, and Bombay and the same ports. It must also be remembered that India is a country of immense distances, and although, on the whole, railway rates are favourable, both for through export and import traffic, the cost of transit between, say, an inland centre such as Cawnpore or Delhi to a port on the seaboard is considerable and is higher in normal times than the ocean freight from the United Kingdom to the same port.

In 1919 there was a decided movement on the part of British manaufacturers to establish branch works in India, and negotiations were in active progress in scores of instances. This was a time when works in the United Kingdom were flooded with orders and when, in some cases, deliveries two and three years ahead were being quoted and fresh business was having to be declined. Moreover, the production was not being maintained at anywhere near the pre-war standard. It was only natural, therefore, that manufacturers should be only too ready to explore the possibilities of developing an additional means of production, especially as they were under the impression that costs of production in India, and labour costs in particular, would be considerably lower than in the United Kingdom. In many instances also they were promised active support by Government. A great many journeys of

investigation to India were made at that time by leading British industrialists, and in a few cases definite arrangements were made for the establisment of branch works in the country. In the majority of instances, however, it was found that the difficulty of securing skilled labour, the shortage and growing unrest of labour of all kinds, and the disinclination of Government to guarantee to purchase a certain proportion of the output threw a very different light on the prospects. Moreover, the high rate of exchange in 1919 and early 1920 was a most important adverse factor. The rise in the gold value of the rupee (consequent upon the advance in silver and other causes) from 1s. 4d. to 2s. 8d. meant an advance of 100 per cent., or, in other words, a reduction in the silver prices of goods imported by 50 per cent. This gave a most important stimulus to imported goods, the result of which is seen in the enormous imports of last year. In many cases negotiations fell through on these grounds. Towards the latter part of 1920, the position in the home works was completely changed. The numerous cancellations of orders and the complete cessation of new business resulted in most works being short of employment by the end of the year. Fresh issues of capital, whether in the United Kingdom or in India, were almost doomed to failure owing to the monetary stringency, and so the question of extensions in India had to be postponed indefinitely. Even where negotiations had reached an advanced stage, and where, in one instance, a heavy expenditure on buildings and plant had already been incurred in India, the projects were abandoned.

The industrial development of India has therefore received a setback, which was inevitable in view of the world-wide depression, and which it is hoped will prove to be merely a temporary check. In the long run it may possibly be found that this setback almost at the outset has been of benefit. During the war, and in view of the urgency of obtaining goods for munitions requirements, some industries were commenced in India which were not economically suited to the country and which could never have stood the full force of world competition. The present depression is acting as a wonderful purge in these cases, and we shall probably find in a few years time that the new industries which have survived are those for which general economic conditions are suitable, and which will therefore be firmly established and in a position to meet any competition.

Before closing this section reference should be made to the possibility of a protective tariff being introduced in India before many years. Fiscal autonomy has, to all intents and purposes, been granted to the country, and an Indian Fiscal Commission is about to be appointed to investigate the whole question this next winter. Protectionist feeling is running very strong in India. Indian politicians and industrialists are almost without exception in favour of protective duties being imposed, and even the British industrialists in India in most cases are of the same opinion. If and when a protective tariff is imposed, the whole

question of establishing branch works in India must be reviewed from an entirely fresh angle of vision, and manufacturers in many cases may find it to be more advantageous to produce within the tariff wall than outside it.

The Competition of Indian Industries with British Works.—The competition of the products of the new industries in India has not yet been severely felt owing to the great volume of accumulated orders for British goods which was liquidated last year by the heaviest shipments ever made by the United Kingdom to India, amounting in the aggregate to no less than £204,000,000. Since those orders were executed, local competition in most products has not been experienced owing to the fact that the glut of imported goods in India brought about a depression in trade, which has affected imported and domestic productions alike, and until the present large stocks of sundry goods are considerably reduced, there is little likelihood of fresh business being placed on an extensive scale.

Indian mills competition in cotton yarns and piece goods is undoubtedly increasing, and I have deemed it to be of such importance that I have devoted a special section to it in Chapter III, pages 54-57. Competition in woollen goods, blankets, serges, coatings, etc., will become more acute, as the few mills in India are steadily improving the quality, finish and dye of their productions and there are several new mills either under construction or projected. The demand for steel last year was so great that British shipments increased enormously, and the competition of the Tata Steel Works was not realised. When the extensions to Jamshedpur are completed, however, the production available will be 425,000 tons of finished steel per annum. Moreover, the plant will have a large reserve of rolling power, and the steel will be diverted from one mill to another in accordance with the fluctuations of the market and the competition which enters it. It is expected to work up to this production in four years' time. In addition to this iron castings will be produced in steadily increasing quantities both at Barakar and at the new Indian Iron and Steel Company's works at Asansol. The two large new projects for iron and steel works are still in the preliminary stage, but there would appear to be little doubt but that the schemes will be proceeded with, in which case, in the course of the next five to ten years we shall see at least three steel works in India of the size of the Tata concern.

Competition in steel bars, billets, plates and sections of all kinds will rapidly and steadily increase, and it must always be remembered that, whether a protective tariff is or is not imposed, Indian manufacturers always have a most substantial natural protection in the costs of freight and handling between the United Kingdom works and the market.

The engineering shops in India are competing more and more in structural steelwork and simple steam engines of all kinds. The supply of steel on the spot in the shape of plates and sections

will tend to stimulate this competition. Hitherto, most of the wagon-building in India has merely consisted of assembling parts and sections imported from home, but with a steel supply at their doors local engineers are bound to become more ambitious.

Jute mill machinery will shortly be produced at Jamshedpur and tea machinery at Agarpara, near Calcutta. There are also several works near Calcutta which are engaged on the manufacture of the essential parts and stores used in jute mills, and I understand that a number of quite good jute looms have already been turned out. It should also be noted that the Calcutta jute mills are encroaching more and more the Dundee trade in the finer Hessians, canvas, etc.

With the development of large local supplies of bamboo pulp, the extension of the paper-making industry is certain, and the time may not be far distant when India will become a factor in the paper markets of the world.

Boot and shoe manufacture has received rather a setback in the past year or so, and the plans for the erection of factories capable of producing two million pairs per annum have not yet matured. A research tannery and boot factory, equipped with the latest plant, will shortly be erected in Calcutta, and there is little doubt that India will, year by year, convert increasing quantities of her hides and skins not only into leather but also into boots and shoes and manufactured leather of all kinds.

The manufacture of concrete pipes by the Hume process is proceeding and is likely ultimately to affect the large import trade in cast-iron pipes for waterworks, etc. The existing cement works are producing large quantities and a number of new works are either under construction or projected. The cement trade with the United Kingdom is very large, but freight bears such a high proportion to value that local works should have a decided advantage. Paints, glassware, pottery and soap are other articles the local manufacture of which shows a tendency to develop, and in which competition will become more acute.

The enormous increase in the costs of production in the United Kingdom since the war acts as a great handicap in competing with Indian goods. Although the producing costs in India, largely in consequence of labour troubles, have advanced considerably, the increase has not been relatively so great as in either England or America. Moreover, taxation is much lower in India. High freights also act as a deterrent to imports. The most important drawback, however, is that in a poor country such as India high prices of imported goods neutralise the advantages they possess of quality, durability and finish, as the consumer has literally not the money with which to purchase them, and although he frequently would greatly prefer the imported article he is forced to buy the locally-made one as it comes within his means. This process of substitution has been very noticeable during the past two years, particularly in the case of textiles.

In conclusion, I can only reiterate the remarks made two years ago, which still apply with just as great force to the position to-day. They are as follows :—

It will be observed that considerable changes are likely to take place in the character of the import trade in future, which will

require many readjustments by British exporters to India. The import trade in several articles is bound to decline, and the competition in many more will become exceedingly acute. India, however, stands at the commencement of an era of great expansion. The increase in her wants is likely to be so great that the general volume of our trade with her is likely to increase rather than diminish. Although there will be many changes in the character of our shipments, I look forward with confidence to a great expansion in our export trade to India when the difficulties and pre-occupations of reconstruction in Europe have been met, and particularly when labour conditions at home enable British manufacturers to quote competitive prices and to give reasonable deliveries.

The extension of industries in India will not only increase the general prosperity of the country, and thereby raise the standard of living of the people, but will tend in the long run to raise the standard and widen the range of commodities imported from overseas, and will make the country a more valuable member of the Empire than she has ever been hitherto.

Government Activities in stimulating Industry in India.—My last report was written in May, 1919, at a time when the Government of India were engaged in winding up the affairs of the Indian Munitions Board and when the project for an Imperial Department of Industries with an All-India Industrial Service on the lines recommended by the Indian Industrial Commission was being considered. A great many changes have occurred since then which have necessitated considerable modification of the original plans. The most far-reaching of these changes has been the introduction of the amendments to the Government of India Act, usually known as the Reforms Scheme, which became law at the end of 1919. The final details were worked out in 1920. The first elections under the revised Constitution were also held in that year and the new machinery of Government came everywhere into operation early in 1921. It would be out of place here to describe at length the sweeping changes effected by the reforms. The keynote of the scheme is effective provincial autonomy and the establishment of an immediate measure of responsibility in the Provinces, all of which are raised to the status of being ruled by Governors in Council. This demanded a sharp division between Imperial and Provincial functions and *the development of industries was one of the subjects handed over to Provincial Governments* except " in cases where such development by a central authority is declared by order of the Governor-General in Council, made after consultation with the local Government or local Governments concerned, to be expedient in the public interest."

Furthermore, in the Provincial Governments the system commonly known as " dyarchy " has been put into operation. The plan is adopted of making a division of the functions of the Provincial Government between those which may be made over to popular control and those which for the present must remain in official hands. These functions are called " transferred " and " reserved " respectively. In the Provincial Executive the

Governor in Council has charge of the reserved subjects. This is one part of the executive. The other part of the executive consists of the Governor and Minister or Ministers and deals with the " transferred " subjects. *The stimulation of provincial industries has been declared to be a transferred subject*, that is to say, it is in charge of a Minister chosen by the Governor from among the elected members of the Legislative Council and holding office for the life of the Council. The Ministers of Industry in all provinces are therefore Indians and the work is under popular control. The executive head of the Industries Department in each province is the Director of Industries who is responsible to his Indian Minister and to the Provincial Government as a whole, but who is entirely free from the jurisdiction of any Department of the Government of India, although—in practice—the Imperial Department of Industries operates as a clearing house of information and as an advisory and liaison Department, and does invaluable work in promoting co-operation and mutual understanding, in initiating new movements, and in placing the experience of its officials at the disposal of local Governments, for—as Sir Thomas Holland, the Member in charge of the Department, has recently pointed out :—

> " Decentralisation of authority and responsibility must necessarily tend to give rise to local variations in policy, apart altogether from those variations that necessarily follow local diversity in natural resources. Thus there arises at once the necessity for designing some machinery to facilitate voluntary co-operation and mutual understanding, for no province can be entirely self-contained in those matters that affect the development of industries on modern lines. For the essential communications, for accessory raw materials, for markets, for financial aid, and even for unskilled labour, one province must rely on the resources of another. Industries do not flourish singly but in family groups; provinces do not develop singly but in federal associations."

The Directors of Industry.—As the provincial Director of Industry is the keystone of the whole system, it may be of interest to consider the personnel and organisation of the various provincial Departments of Industry, as set out in Notes prepared by the Directors for the second Conference which was held at Cawnpore in November, 1920. These are given in Appendix VII, page 258.

The Directors of Industry have been appointed in a somewhat haphazard manner, and are not members of any separate industrial service. The Directors in Madras, Bombay, Burma, Bihar and Orissa and the Central Provinces are members of the Indian Civil Service. The Director in Bengal is a member of the Indian Educational Service. One or two other directors have been appointed from outside. In almost every case they have been selected rather on account of their general administrative experience and ability than on account of any specialised knowledge which they might possess on the questions with which they

have to deal. They are, in fact, departmental chiefs, who rely on expert assistants for their technical advice. In several provinces Advisory Boards, consisting of prominent local leaders of finance, industry and commerce with a few officials, have been appointed to assist the local Director with their advice and criticism.

Activities of the Directors.—As the service is in its infancy, the activities of Directors vary considerably according to their ability and energy and also to the special needs of their respective provinces. In some parts of India, such as Madras and the United Provinces, departments of industry have been in existence for many years, and in these cases the work is well-developed, and there are traditions to be followed. In most other provinces the work has only been started during the past five years, and it will be some time before the organisation is perfected and its influence felt. The principal activities so far have been directed to such questions as :—

(*a*) The development and improvement of hand-loom weaving.

(*b*) The development of well-boring and the encouragement of the use of pumps, rice mills, etc., in Madras.

(*c*) The promotion of pioneer and demonstration factories.

(*d*) The supervision of industrial and technical education.

(*e*) The provision of experts to assist in improving the standard and extending the scale of production in certain industries.

(*f*) The study of and collection of statistics with regard to labour questions.

(*g*) The encouragement of research, and the rendering of assistance in applying the results of such research to local industries.

(*h*) The collection and distribution of industrial intelligence.

In addition, the following general administrative functions have recently been added to their duties :—

(1) Supervision of factory inspection within the province.

(2) Supervision of boiler inspection within the province.

(3) Supervision of smoke nuisance inspection in the case of Bengal.

(4) Supervision of the administration of the Electricity Act.

Financial and other Forms of Assistance to New Industries.—This is a most important question from the point of view of the exporter to India, who, naturally, would view with some anxiety the possibility of State-subsidised industries being built up to compete with him. The following note, prepared by the Finance Department of the Government of India, is interesting, as it shows the practical checks which will operate in case a provincial

Minister of Industries decides to give a cash grant or make a loan to any industry within his province :—

> " Industries will be an entirely transferred subject, and the Government of India Act and the rules made under it impose no restrictions at all upon the powers of local Governments to spend money in this connection. Ministers will be able to give cash grants, recurring and non-recurring, at their discretion, and to make loans from the Provincial Loan Account to any extent they please. In order to finance the Provincial Loan Account, they can, if they wish, raise loans in the open market. There will, however, be two main checks upon the exercise of their discretion in this connection, and these checks will be exercised by the provincial Finance Department and the provincial Legislative Council. No money can be spent until it has been voted by the Legislative Council as part of a grant demanded by the executive. The Finance Member will be responsible for the presentation of the budget, and under a rule made under Section 45A of the Government of India Act he will refuse to include in a demand any proposal for expenditure that has not been thoroughly scrutinised in his own department. In the course of his scrutiny he will, of course, be entitled to object to any expenditure on financial grounds. He will not be able to overrule the Minister, in case the latter is not prepared to accept his objection, but he will be entitled to insist that his opinion should be submitted to the Governor for the orders of the local Government. If the Governer backs the financial objection, the Minister will not get his scheme through.
>
> " As I have shown above, it will be necessary for a Minister before spending money on industries to run the gauntlet of financial criticism as well as of discussion in the Legislative Council which will have full power to reduce any provision for expenditure which he may make in his part of the budget. There will be yet another check upon the Minister's action which it may be hoped in the course of time will become a very real one. This check will lie in the ultimate scrutiny of the accounts by the Committee on Public Accounts. This body will be empowered to examine every item of expenditure incurred, to make its comments upon them, and to refer any case which it considers to call for this course for the decision of the Legislative Council as a whole."

A further form of financial assistance would be by means of loans by industrial banks. The industrial banks at present operating in India are mainly engaged on ordinary banking business and not on industrial business, and the suggestion has been made that there is a need for the establishment of provincial banks with the countenance of Government, but not necessarily with any financial support from the Provincial Government. The present position is being examined by the Government of India.

Speaking generally, the assistance being rendered to domestic industries follows the lines of the recommendations of the Indian Industrial Commission as follows :—

Cottage industries.
- (*a*) Peripatetic weaving parties.
- (*b*) Labour-saving devices.
- (*c*) Auxiliary power factories.
- (*d*) Methods of marketing.

Large organised industries.
- (*a*) Scientific research by Government.
- (*b*) Loan of experts.
- (*c*) Provision of accurate information.

Small organised industries.
- (*a*) Competent technical assistance.
- (*b*) Assistance in maintenance of plant.

Advice to British Agents and Representatives.—I would call the attention of the agents, representatives and travellers of British firms engaged in the manufacture of industrial plant, machinery and stores of all kinds to the desirability of establishing friendly relations with the Directors of Industry in the various provinces. The influence of the Directors is likely to grow rapidly. They are in touch with all new industrial developments in their provinces, and could give valuable information and advice as to the needs for a particular machine or class of stores, the names of firms likely to be interested, and the best manner of securing the business. In certain important cases, they would probably be willing to give introductions. British manufacturers of plant, processes and stores likely to be required in certain provinces might also, with advantage, send complete catalogues, price lists and other literature relating to their products to the Director concerned for his information, but a personal visit paid by the representative in India is of greater value. I feel sure that Directors would appreciate such attentions, as they are always prepared to receive technical information and advice with regard to the industries in which they are interested. Their names and addresses are as follows :—

Bengal.—D. B. Meek, Esq., D.Sc., Director of Industries, Calcutta.
Bombay.—R. D. Bell, Esq., C.I.E., Director of Industries, New Custom House, Bombay.
Madras.—C. W. E. Cotton, Esq., C.I.E., Director of Industries, Madras.
Burma.—H. B. Holme, Esq., Director of Industries, Phayre Street, Rangoon.
United Provinces.—The Director of Industries, Cawnpore, United Provinces.
Bihar and Orissa.—B. A. Collins, Esq., Director of Industries, Ranchi.
Punjab.—E. A. Scott, Esq., O.B.E., Director of Industries, Lahore, Punjab.
Central Provinces.—H. R. Crosthwaite, Esq., C.I.E., Director of Industries, Nagpur, C.P.
Assam.—Rai Bahadur K. L. Barua, Director of Industries, Shillong, Assam.

The Imperial Department of Industries.—Sir Thomas Holland, K.C.S.I., K.C.I.E., formerly President of the Industrial Commission and of the Board of Industries and Munitions, was appointed as Honourable Member of the Viceroy's Executive Council in charge of Industries in February, 1921. Each Department has a separate secretary and staff and is run independently under the one member.

The Industries Department is very much in a transition stage and many pressing questions as to its future activities and functions are still *subjudice*. No decisions have yet been arrived at with reference to the formation of the proposed All-India Industrial Service and All-India Chemical Service, and those and other similar questions are now the subject of negotiation with the provincial Governments. The political tendency in India is towards decentralisation and although, in these instances, there is a very strong case for centralisation under the Imperial Government, new All-India services cannot lightly be created unless provincial Ministers are in agreement. This movement towards decentralisation and increase of the powers and scope of provincial Governments places the central Department of Industries in a somewhat delicate position. The personality and driving power of Sir Thomas Holland, however, has done much to bring about a satisfactory solution of the many difficulties.

So far, the activities of the Department have been directed towards acting as a central clearing house of information and providing a central authority which would promote co-operation among the provincial Departments. The Department aims at being of service to local Governments by affording help in such ways as the following:—

(*a*) The lending of experts to study local conditions, report on the feasibility of technical schemes, the best way to overcome local difficulties, etc.

(*b*) The recommendation to local Governments to take up investigation of new industries.

(*c*) The recommendation to local Governments to take over new industries which have been partially investigated by the central Government.

(*d*) The giving of advice based on the experience of others, *e.g.*, the evidence of the failure of certain handlooms.

(*e*) The periodical inspection of technical schools, on the invitation of the local Government, the inspectors being asked to see if they are being run on the most up-to-date or the most successful lines.

(*f*) The tours of officers of the Stores Purchasing Organisation, who would indicate the lines on which manufactures might be profitably developed and the ways in which the product might be improved in order to meet the indentor's requirements.

A quarterly Journal of Indian Industries and Labour is being published as a result of the unanimous request of two Conferences of Directors of Industry in 1920. This publication, in the words of its founder, " is intended not only to serve as a bond of union between those who are working towards similar ends in different provinces, but also as a medium for communicating to a wider public, within and outside India, information that will assist private enterprise." Special Bulletins are also being issued at irregular intervals dealing with specialised subjects, such as labour questions, Factory Law administration, notes on minerals, etc., in monographic form for the help of those who wish to limit their interests to special lines of work. I would commend British firms who may be interested to apply for copies of these publications through the agents in the United Kingdom for the sale of books published by the Superintendent of Government Printing, India.

Activities of Government with regard to Labour Questions.— Two outstanding events have contributed to bring labour questions before the attention of the Government of India during the past two years. The first of these is the serious number of strikes which have been prevalent in every industry in the country, and which have resulted in considerable injury to all industries and trade and to the community in general. The other important event is the representation of India, as a Member of the League of Nations, at the first International Labour Conference held at Washington in the autumn of 1919 and early in 1920. Both these events call for some action on the part of Government; the first because it is difficult for any Government which has committed itself to a programme of industrial expansion to stand by and see considerable damage done to its nascent industries without taking some steps in the matter; and the second because the Government of India, as a member of the International Conference, is bound to take some action to carry out the resolutions of the Conference so far as is possible in the special circumstances of the case, and moreover it is incumbent on it to send each year not only two Government delegates, but also one delegate representing the employers and one representing the workers to attend future Conferences.

The whole question was raised at a conference of Directors of Industry in April, 1920, when the opinion of the Directors was sought on the following points:—

(1) Should any machinery be set up in each province by the Government to deal with labour disputes?

(2) Should the Government of India intervene in such disputes: if so, at what stage?

(3) Should the Government participate, in any way, in the preliminary work of the organisation of Trade Unions: if so, what action should be taken?

(4) What should be the actual lines on which such organisation should take place?

(5) Until these organisations come into being, how should the Government of India select a delegate and advisers to represent the working classes at meetings of the International Labour Conference?

It was considered that the first step should be the collection of complete and accurate statistical information, and to this end arrangements were made with the Census Authorities to widen the basis of their enquiries in the 1921 Census by the inclusion of an industrial schedule which would afford information with regard to the nature of the industry; the organisation and direction; the management; supervising and technical staff; clerical staff; operatives—by sex and age; extent and nature of the power used and some account of the present state of the industry. The co-operation of the Directors of Industry was promised and a Central Labour Bureau under a Director has been created at the Department headquarters and has already done considerable work in arranging for the collection of statistics and the publication of useful monographs. As the settlement of labour disputes is a matter which falls within the scope of local Governments, the Directors undertook to raise with their respective Governments the desirability of instituting Labour branches in each provincial Department (both for the consideration of local labour questions and to advise the Government of India which has to represent Indian labour and answer the questions put by the Secretary of State).

As regards the settlement of disputes, the Directors were informed that local Governments would be addressed in a letter which would suggest for their consideration the question of setting up some local machinery on the lines of the British Industrial Courts Act, 1919. Since the meeting was held, most of the local Governments have expressed the opinion that such legislation would be premature in view of the existing conditions in India. Apparently some of the local Governments have already taken action in constituting Boards of Conciliation or of Arbitration. Good work has already been done in Madras on these lines and similar action has apparently been taken with success in a recent instance in Burma.

Steps have since been taken to carry out the suggestion made at this conference. Figures with regard to the cost of living and wages and reports on strikes are being submitted by the Provinces to the headquarters Labour Bureau, and the Provinces have already taken up the creation of special organisations for the collection and collation of information relating to labour questions. A Labour Commissioner has been appointed in Madras. An Industrial Intelligence Officer now works under the Director of Industries, Bengal. The Punjab Government have appointed a Board of Economic Enquiries. The greatest progress has been made by Bombay.

The Bombay Labour Office.—The Bombay Government at the instigation of His Excellency Sir George Lloyd invited the

assistance of the Home Authorities in securing the temporary services of an expert with a view to assisting in the preliminary organisation of the office. Mr. F. H. McLeod, C.B., the Chairman of the Industrial Court, who was for many years connected with the Labour Department of the Board of Trade, came out to India in the autumn of 1920 to carry out this work and spent the whole of last cold weather at the task. As a result of his work, the Bombay Labour Office has been created in charge of a Director, Mr. G. Findlay Shirras (formerly Director of Statistics with the Government of India), to whose courtesy I am indebted for this information. The Director is responsible for its management, for the conduct of enquiries and the preparation of reports. He will be assisted by investigators, statistical clerks and the usual office staff. In addition to this regular whole-time staff, a number of honorary correspondents have been appointed among those men and women who are voluntarily rendering social service in Bombay and other parts of the Presidency. By this means, it is hoped to establish a network of unofficial correspondents who will keep the office fully informed of labour matters in their respective districts.

The immediate functions of the office may be grouped under four main heads as under :—

(1) *Statistics.*—The collection of information with regard to wages, hours of labour, retail prices, rents, and generally any facts which will throw light on the economic and social conditions of the workers. Statistics of strikes and information with regard to Trade Unions also fall within this group.

(2) *Intelligence.*—The collection of day-to-day information as to all labour movements and disputes and labour conditions in other countries will be carefully followed. A collection of labour laws will also be made.

(3) *Industrial disputes.*—As experience and knowledge are gained and the activities of the Labour Office develop, it is anticipated that it will be of the greatest utility to Government in the practical measures which it may find it expedient to undertake with a view to promote the settlement of industrial disputes when they arise.

(4) *Legislation and other measures.*—To advise Government from time to time as regards necessary new legislation or the amendment of old laws. In this connection the facilities afforded by the Department for obtaining full and accurate information on social, economic and labour matters, both in India and in other countries, will be of the greatest assistance to private members or Government departments whose duty it is to initiate legislation on social or industrial subjects.

I understand that many enquiries are already being received by the new Labour Office and that several informal meetings have been held, at the instance of employers, to discuss such questions as Employers' Federations, Trade Unions, etc., etc.

India and the International Labour Conference, 1919-20.—India was represented at the Washington Conference by the following delegation :—

Government delegates.

Mr. (now Sir) L. J. Kershaw, C.S.I., C.I.E., Secretary, Revenue and Statistical Department, India Office, London.

Mr. A. C. Chatterjee, C.I.E., I.C.S., Chief Secretary to the Government of the United Provinces.

Adviser.

Mr. J. D. F. Engel, Chief Inspector of Factories, Bombay Presidency.

Employers' delegate.

Mr. (now Sir) A. R. Murray, C.B.E., Chairman of the Indian Jute Mills Association.

Workers' delegate.

Mr. N. M. Joshi, Secretary, Social Service League, Bombay.

Adviser.

Mr. B. P. Wadia, President, Madras Labour Union.

The results of the deliberations may be summarised under the headings of the six draft conventions and the six recommendations of the Conference. They were as follows :—

1. Draft Convention limiting the hours of work in industrial undertakings to eight in the day and forty-eight in the week.
2. Draft Convention concerning unemployment.
3. Draft Convention concerning the employment of women before and after childbirth.
4. Draft Convention concerning the employment of women during the night.
5. Draft Convention fixing the minimum age for admission of children to industrial employment.
6. Draft Convention concerning the night work of young persons employed in industry.

1. Recommendation concerning unemployment.
2. Recommendation concerning the protection of women and children against lead poisoning.
3. Recommendation concerning reciprocity of treatment of foreign workers.
4. Recommendation concerning the prevention of anthrax.
5. Recommendation concerning the establishment of Government Health Services.
6. Recommendation concerning the application of the Berne Convention of 1906 on the prohibition of the use of white phosphorus in the manufacture of matches.

A copy of the despatch dated November 25th, 1920, and addressed by the Government of India to the Secretary of State regarding the action which they propose to take upon the Draft Conventions and Recommendations referred to above, is available at the Department of Overseas Trade. I would commend this despatch to the careful attention of readers likely to be interested, as it reveals very clearly the Indian position and the sympathetic attitude of Government on these questions. The keynote of the despatch is the following sentence :—" The conventions have been framed, on

the whole, in a reasonable spirit, and, apart from our natural desire to avoid alienating opinion abroad, we believe that, with the exceptions noted below, their ratification will be beneficial to the interests of Indian industry and labour. We have endeavoured to give the widest publicity to the whole question, and our conclusion has been reached after consideration of all sections of public, as well as official, opinion in India."

The Conventions which necessitate legislative action were laid in the form of Resolutions before the Indian Legislature in February, 1921, and were duly ratified. I would refer readers to the Debates of the Indian Legislative Assembly, Vol. 1, No. 5, for the complete discussion which took place on that occasion.

Draft Convention relating to Hours of Labour in India.—A Committee of the Washington Conference with the Right Hon. G. N. Barnes, M.P., as Chairman, examined the application of the proposed 48-hour week in the case of India and came to the conclusion that in view of the special conditions operating in the country, the Government of India should be asked to adopt the principle of a 60-hour week. The Committee's report in this connection is so interesting that I venture to reproduce it.

India.

" 1. The committee has had the advantage of access to a good deal of available information about Indian industrial conditions by means of the official replies of the Indian Government and the statements of the delegates of the Government, the employers, and the workers. But it is clear that that information covers only a relatively small part of the ground, mainly for the reason that in India conditions do not approximate to anything which is known in the western world. The total number of persons in British India employed in organised industrial undertakings, such as factories, mines, and railways, constitutes an insignificant proportion of the whole population. Other industries are still almost universally on a small scale, and the predominant industry of India is agriculture.

2. At the same time it appears that such industries as exist in India, especially textiles, and Government and private railway and engineering workshops, are quite well organised. It is true that present Indian conditions are not such as to make easy in the immediate future either large scale factory production or the application of western standards in the restriction of working hours. Nevertheless, in the industries mentioned, something has already been done in both directions. India has had three factory laws, each law marking a substantial advance on its predecessor. The committee has had evidence that the laws have been well administered and are effective.

3. The factory law at present covers mainly textiles and certain branches of railway and engineering work, and applies

only to establishments in which at least 50 persons are employed, though it is possible, by administrative order (which has often been brought into effect where abuses were suspected) to bring under the law establishments employing 20 persons.

4. The committee is of opinion that the present conference can legislate usefully only with regard to large industrial undertakings, such as are already within the scope of the factory acts and mines. With regard to these (*i.e.*, all industries at present under the factory acts, mines and certain branches of railway and iron works), the committee recommends that the Government of India should be asked to adopt the principle of a 60-hour week.

5. The committee, however, recommends the conference to lay before the Government of India a very urgent request that it should consider two important matters; first, the possibility of adopting a lower limit for underground work in mines, and secondly, the possibility of adopting in the light of standards accepted in other countries a modified definition of 'factory,' which would reduce the number of workers required to bring a factory under the scope of the Act. The committee thinks that it should be possible at an early date to limit the hours of underground work in mines to 54 or even lower; and recommends this step to the favourable consideration of the Government of India.

6. With regard to small industries not coming under the provisions of the Factories Act, the Government of India might be requested to expedite as much as possible the collection of information and statistical data. And as apart from this the committee understands that inquiries were initiated several months ago relating to the amendment of the Factories Act with a view to bettering the conditions of labour, the Government of India might also be requested to communicate at the earliest possible date, and if possible before the next conference, to the International Labour Office the results of these enquiries and the proposals of the Government for carrying into effect the tendencies apparent in modern legislation.

7. The committee therefore recommends the conference to embody the substance of paragraph 4 of this report in the form of a convention, and to communicate to the Government of India the observations and requests of the remaining paragraphs."

A copy of the despatch dated 26th November, 1920, from the Government of India to the Secretary of State, outlining their proposals for the revision of the Indian Factories Act (XII of 1911) with a view to giving effect to the above recommendations of the International Conference is available at the Department of Overseas Trade. The principle of the application of a 60-hour week had already been

accepted by the Legislative Assembly in their general ratification of the Washington Conventions and Resolutions. The Government of India, therefore, introduced the new Indian Factories (Amendment) Bill on the 17th March, 1921, and recommended that it be referred to a Joint Committee of the Assembly and of the Council of State. This motion was adopted: *vide* Legislative Assembly Debates, Vol. 1, No. 13. The Bill will therefore be presented to the Legislature at the next Session in September, and it is hoped that, inasmuch as its principal features have already been approved, it will be passed and will become law in 1922.

The Indian Factories (Amendment) Bill.—The complete text of the new Bill, together with an explanatory statement of the objects and reasons and detailed comments on the various clauses, can be seen on application to the Department of Overseas Trade. The principal provisions are the following :—

(*a*) No person shall be employed in a factory for more than sixty hours in any one week.

(*b*) No person shall be employed in any factory for more than twelve hours in any one day.

(*c*) No person shall be employed in any factory on a Sunday, provided that the inspector may permit the manager of any factory for such period of not less than three months and for such persons and such class of persons as the inspector may specify to substitute some other day for Sunday.

(*d*) In every factory there shall be fixed—

(1) for each person employed on each working day at intervals not exceeding six hours, periods of rest of not less than one hour; and

(2) for each child working more than five hours in any day, a period of rest of not less than half an hour. The period of rest under this clause shall be so fixed that no child shall be required to work continuously for more than four hours.

(*e*) The age at which a child shall be treated as an adult worker is raised from fourteen to fifteen.

(*f*) The minimum age at which a child may be employed in a factory, is raised from nine to twelve. Children, however, who have been lawfully admitted to factories before July 1st, 1921, shall not be excluded, and the limit of twelve years will not be introduced until July 1st, 1922. The maximum number of hours during which a child may work in any one day shall not exceed six.

(*g*) The term " factory " is taken to mean—

(*a*) any premises wherein, or within the precincts of which, on any one day in the year not less than twenty persons are simultaneously employed and steam, water, or other mechanical power or electrical power is used, etc.; or

(*b*) any premises wherein, or within the precincts of which, on any one day in the year not less than ten persons are simultaneously employed and any process, etc., is carried on, whether any power is used in aid thereof or not, which have been declared by the Local Government by notification in the local official gazette to be a factory.

(*h*) The atmosphere of a factory shall not be rendered so humid by artificial means as to be injurious to the health of the persons employed therein.

The Institution of Engineers (India).—Before closing this chapter dealing with industrial developments in India during the period, mention should be made of the inauguration of the Institution of Engineers (India) in February, 1921. It had been felt for some time that there was a growing need in India for an Institution combining the civil, mechanical and electrical branches of the engineering profession. While it is true that most engineers in the country belong to one or another of the Home Institutions, it was found to be very difficult, with such a scattered European population and such great distances, to work successfully local branches of the Home Institutions so as to make them really influential bodies. Thanks to the energy and enterprise of one or two enthusiasts, ably backed by Sir Thomas Holland and the Board of Industries, a central Indian Institution has now been successfully launched, and was formally inaugurated by His Excellency Lord Chelmsford on February 23rd, 1921.

The address of the Secretary of the Institution of Engineers (India) is Post Box 669, Clive Buildings, Calcutta. In addition to the central body, branch associations are being formed, so that there may be rallying points in most provinces. The Bengal Association was formed in April last with offices in Calcutta.

One of the first questions which is being taken up by the new Institution is the standardisation of engineering materials and plant. It is proposed that the General Committee of the Institution shall act as the Indian Committee of the Engineering Standards Association.

CHAPTER IV.

DETAILED EXAMINATION OF THE LEADING IMPORT TRADES WITH SPECIAL REFERENCE TO CHANGES IN THE CHARACTER, VOLUME AND ORIGIN OF THE IMPORTS DURING THE YEARS 1919 AND 1920.*

MANUFACTURED AND MAINLY MANUFACTURED GOODS.

Cotton Textiles.—*Yarns.*—The outstanding features of the period under review have been a steady and most satisfactory increase in the imports of cotton yarns from the United Kingdom, a phenomenal decline in Japanese imports in the first year, with a complete recovery in 1920-21, and a slight increase in the

* Unless otherwise stated, the statistics given in this section are drawn from the publications of the Department of Statistics, Government of India, whose statistical year extends from April 1st to March 31st.

production of Indian mills. The following table gives the position as regards imported twist and yarns :—

Principal countries of consignment.	1918–19.		1919–20.		1920–21.	
	lbs. (1,000).	Rs. (1,000).	lbs. (1,000).	Rs. (1,000).	lbs. (1,000).	Rs. (1,000).
United Kingdom ...	9,612	33,571	12,230	35,360	23,396	79,525
Japan	27,280	53,291	1,918	6,070	20,123	48,994
Total Imports...	38,095	88,663	15,097	43,595	47,333	135,783

The production of the Indian mills as compared with the imports is clearly shown in the following statement :—

Years.	*Imports in lbs.*	*Indian Mills. Production in lbs.*
Annual average for the five years 1904-5 to 1908-9	38,573,000	641,776,000
Annual average for the five years 1909-10 to 1913-14	41,794,000	646,754,000
1913-14	44,171,000	682,777,000
1914-15	42,864,000	651,985,000
1915-16	40,427,000	722,425,000
1916-17	29,530,000	681,107,000
1917-18	19,400,000	660,576,000
1918-19	38,095,000	615,040,000
1919-20	15,097,000	635,760,000
1920-21	47,333,000	660,003,000

This table is interesting as it shows that while the Indian mill production showed a tendency to expand in the early years of the war, there has since been a considerable reduction in the output, and the present figures show a slight decrease on the production in 1913-14, the last pre-war year.

In Appendix VIII, page 264, will be found a detailed statement showing the imports of yarn from the United Kingdom and Japan respectively, side by side with the Indian mills production in 1919-20 and 1920-21, and arranged according to counts. From this it will be observed that in counts below 30s the Indian mills are supreme, and there appears to be no chance of our recovering this trade. In counts from 31s to 40s the mill production has declined and imports have increased considerably, the excess of imports being over 7,800,000 lbs. There has been a steady decline in the spinning in India of counts above 40s during the past three years and imports have been fairly well maintained. In Appendix IX is given a table showing the total weight of each count of yarn spun in all India during the years 1918-19, 1919-20, and 1920-21, which shows that the greatest weight is spun in the following counts (in order of importance) : 20s, 24s, 22s, 11s, 21s, 12s, 16s, 10s, 14s, 30s and 18s.

Piece Goods.—The following table shows the quantitative imports of the three main classes of piece goods for the past five years and the last pre-war year :—

Year.	Grey (Unbleached).	White (Bleached).	Coloured, printed or dyed.
	Million yards.	Million yards.	Million yards.
1913–14	1,534·2	793·3	831 8
1916–17	847·0	589·8	454·9
1917–18	625·5	502·3	395·6
1918–19	583·4	286·6	227·3
1919–20	533·3	322·0	208·3
1920–21	580·2	421·8	489·2

This should be studied in conjunction with the next table which shows the *value* of the imports of the three main classes of piece goods during the same period.

Year.	Grey (Unbleached).	White (Bleached).	Coloured, printed or dyed.
	£	£	£
1913–14	16,966,515	9,523,204	11,907,683
1916–17	11,246,501	8,529,012	10,058,921
1917–18	12,288,207	9,469,884	10,763,835
1918–19	15,729,434	8,753,647	7,879,640
1919–20	22,517,784	15,963,337	12,750,138
1920–21	26,452,009	21,895,015	34,568,395

The above figures show that while there has been a reduction in yardage under the three main headings of 62, 47 and 41 per cent. respectively, the increase in the value of the diminished quantities has been enormous. India has purchased less cloth owing to the rise in price having placed the goods beyond the means of the consumers. The average Indian rayat has only a certain available sum with which to purchase clothes, and if the price advances to the levels of the past few years he must either refrain from purchasing altogether, substitute cheaper quality goods, or else buy most sparingly. In many cases piece goods have not been bought for years and hundreds of thousands of families are literally in rags. In others, the cheaper Indian and Japanese woven fabrics have been substituted, although it must be admitted that this has not given much relief, as both the Indian mills and the Japanese importers have maintained their prices at market rates. In most cases British goods have been bought, but in greatly reduced quantities. Had prices remained at the 1913-14 level the quantities of piece goods which would have been imported in 1920-21 in return for the money actually expended would have shown an increase in yardage of at least 33⅓ per cent. on the 1913-14 imports.

The following table shows the quantitative imports of the three main classes of piece goods from the United Kingdom during the past eight years :—

Imports of Cotton Piece Goods from the United Kingdom.

Year.	Grey (unbleached).	White (bleached).	Coloured, printed or dyed.	Total (including Feuts).
	Yds. (1,000).	Yds. (1,000).	Yds. (1,000).	Yds. (1,000).
1913–14 (pre-war) ...	1,516,028	781,407	770,396	3,104,311
1914–15	1,294,655	595,505	463,640	2,378,048
1915–16	1,099,022	601,410	322,529	2,049,489
1916–17	762,016	582,215	403,721	1,786,138
1917–18	544,991	496,161	362,974	1,429,629
1918–19	375,302	274,889	201,263	867,058
1919–20	464,600	311,043	187,025	976,128
1920–21	420,437	408,560	448,598	1,291,513
Decrease in 1920–21 (per cent.) as compared with 1913–14 (pre-war year) ...	—72	—48	—42	—59

The principal varieties under each of the three great classes, and the quantity of each variety imported were :—

Total Imports of Piece Goods into India (in millions of yards).

——	1913–14 (pre-war year).	1918–19.	1919–20.
Grey (unbleached)—			
Dhutis, saris and scarves ...	806·1	304·3	348·2
Jaconets, madapollams, mulls, &c.	150·4	48·9	40·7
Longcloth and shirtings ...	545·4	159·6	114·5
Sheetings...	·2	53·8	17·8
Drills and jeans	21·3	13·7	9·8
Other sorts	10·8	3·1	2·3
Total	1,534·2	583·4	533·3
White (bleached)—			
Dhutis, saris and scarves ...	104·3	35·8	37·9
Jaconets, madapollams, mulls, &c.	307·9	133·9	119·9
Longcloth and shirtings ...	115·3	65·9	77·3
Nainsooks	204·7	27·1	59·1
Drills and jeans	5·7	4·4	3·3
Checks, spots and stripes ...	16·1	1·3	3·9
Twills	8·3	2·2	6·2
Other sorts	31·0	16·0	14·4
Total	793·3	286·6	322·0
Coloured, printed or dyed—			
Dhutis, saris and scarves ...	115·2	21·4	23·5
Cambrics, etc.	113·6	29·3	29·5
Shirtings...	152·6	24·7	28·0
Prints and chintz	209·7	70·0	48·9
Drills and jeans...	30·0	16·9	7·1
Checks, spots and stripes ...	19·7	5·3	5·6
Twills	31·4	10·8	7·5
Other sorts	159·6	48·9	58·2
Total	831·8	227·3	208·3

N.B.—The classified statistics for 1920-21 are unfortunately not yet available.

A detailed statement of the quantity and description of woven goods produced in Indian mills during the past eight years is given in Appendix IX (B), page 266, and is noteworthy as showing that the expansion in output by the mills in India has not been as great as would have been supposed, that of 1920-21 on 1913-14 being 416,558,158 yards or just under 36 per cent. The reason for this is that mills were unable to extend their plant during the war, and although there have been a very great number of new mills floated during the past 2½ years the machinery and plant is in most cases only now being erected and consequently their influence has not yet been felt.

Japancse Competition.—The chequered progress of Japanese competition in the Indian piece goods market is clearly shown by the following figures of imports of piece goods from Japan over a lengthy period :—

Years.	Greys (Unbleached).	Whites' (Bleached).	Coloured, dyed or printed.
	Yards.	Yards.	Yards.
Average of 5 years, 1909-10—1913-14.	2,559,000	48,000	521,000
1914-15	15,265,000	68,000	709,000
1915-16	34,852,000	991,000	3,349,000
1916-17	75,621,000	2,558,000	21,937,000
1917-18	73,278,000	2,602,000	18,676,000
1918-19	206,838,000	10,484,000	20,806,000
1919-20	62,743,000	2,753,000	10,456,000
1920-21	150,428,000	3,820,000	16,075,000

A severe set-back was experienced by Japan in the year 1919-20 which was largely due to the industrial crisis experienced by that country. In the past year, however, she has largely made good her position and is at the present time dumping heavy stocks of grey goods into India which had been accumulated during the recent depression, and which Japanese manufacturers are unloading at very low prices and are underselling even the Bombay mills in their own market.

The relative position of the United Kingdom and Japan as regards the percentage of piece goods imported from each can be seen from the appended table :—

Description.	1913-14.	1918-19.	1919-20.	1920-21.
Grey (unbleached)—	Per cent.	Per cent.	Per cent.	Per cent.
From United Kingdom ...	98·8	64·3	87·1	73
From Japan	0·5	35·5	11·8	27
White (bleached)—				
From United Kingdom ...	98·0	95·9	96·6	95
From Japan	0·5	3·7	0·9	1
Coloured, etc.—				
From United Kingdom ...	92·6	88·5	89·9	88
From Japan	0·2	9·2	5·0	3

In order to ascertain the styles of goods in which Japan is competing, the following particulars of the varieties of goods imported from Japan in 1919-20 (the last year for which detailed figures are yet available) will be of interest:—

Description.	*Quantity.* Yards (1,000).	*Value.* £ (1,000).
Unbleached, plain goods.		
Drills and jeans	4,477	223
Jaconets, including madapollams, mulls and cambrics	1,937	71
Longcloth and shirtings	37,674	1,703
Sheetings	16,499	813
Unbleached, bordered goods.		
Dhooties, saris and scarves	1,896	'65
Bleached.		
Drills and jeans	576	34
Longcloth and shirtings	1,893	102
Printed goods.		
Checks, spots and stripes	109	6
Flannel and flannelettes	377	27
Prints and chintz	80	4
Shirtings	292	14
Dyed goods.		
Flannels and flannelettes	259	17
Shirtings	458	25
Twills	57	5
Unspecified	1,514	85
Woven coloured goods.		
Checks, spots and stripes	166	10
Drills and jeans	2,312	128
Flannel and flannelette	107	6
Shirtings	601	35
Twills	84	8
Unspecified	2,946	209

Although Japanese imports have been considerably reduced from the high water mark of 1918-19, they are still on an appreciable scale and it is likely that they will be maintained at their present level in spite of the recent heavy losses incurred by Japanese merchants on account of the fall in exchange, defaulting dealers, etc.

It should be noted that the Japanese merchant houses in Calcutta have lost the leading positions in the distributing trade in piece goods which they held during the war. In the calendar year 1920, the total imports of piece goods into Calcutta were 406,333 packages, of which the Mitsui Bussan Kaisha imported 12,467, the Nippon Menkwa Kaisha 12,336, and Messrs. C. Itoh & Co., 3,877. The two former firms have fallen from first and second place, which they held during the war, to fourth and fifth on the list. Several of the smaller Japanese merchants have closed their branches in India, and all of them have sustained very severe losses during the recent crisis in the import trade. The reasons for Japan's success as a competitor were dealt with very fully in my Report on the War Period (Cmd. 442), to which I would refer readers who may be interested. I propose in the present review to treat at greater length the question of Indian

mill competition, which is really more serious, as it is not only of greater volume but also of greater future significance, and has recently been brought again to the forefront of attention by the increase of the import duties in the last budget. Before doing so, however, it will be as well to mention the competition received from Holland, the United States, and Italy.

Dutch Competition.—In 1919-20 the total imports of cotton piece goods, including twist and yarn, from Holland was £688,473, while in 1920-21 this increased to £1,199,279. The following are the principal classes supplied by the Netherlands during the former year:—

	Thousands of yards.	Thousand £
Bleached jaconets, cambrics and muslins	589	38
Bleached longcloth and shirtings	3,386	248
Total of bleached goods	4,084	293
Printed loongis	315	22
Dyed shirtings	122	9
Woven loongis	2,631	213
Total of coloured, printed or dyed ...	3,419	278

It will be observed that Holland specialises in two distinct classes of trade, viz., white shirtings and woven loongis. The former have a considerable sale in the Karachi and Punjab markets and are popular on account of the excellent bleach and finish. The Dutch have been noted for their excellent finishes in bleached goods for many years and enjoy a very large trade, not only in India, but also in the Straits Settlements and Dutch East Indies. It is probable that a certain proportion of the trade includes cloth made in Lancashire and sent over to Holland to be bleached and a still greater proportion of cloth woven and bleached in Holland from British spun yarns. The woven loongis are very similar in style to the kamboys used in Ceylon, and the sarongs worn in the Straits and the Dutch Indies, of all of which goods Holland supplies a very great proportion. Many attempts have been made by British manufacturers to capture this trade, but so far without success, as the Dutch goods are unsurpassed for brightness of colour and evenness of the threads. The bulk of the loongi trade is centred in Rangoon.

American Competition.—The progress of American competition during and since the war may be estimated from the following table of American cotton piece goods imported into India in the following years:—

	£
1913-14	173,000
1916-17	204,000
1917-18	230,000
1918-19	222,000
1919-20	471,000
1920-21	590,000

During 1919-20 no less than £352,000 represented grey goods and consisted almost exclusively of the well known brands of drills and jeans (£278,000) and sheetings (£71,000). Imports of bleached goods were negligible. As regards coloured cloths, we may note printed loongis (£22,000). The American trade in heavy unbleached fabrics appears to be growing steadily although it is meeting severe competition from Japan.

Italian Competition.—The imports of cotton piece goods from Italy, as may be expected, have had a chequered career during the war, but there has been a tremendous expansion in 1920-21.

The following are the values of the total imports :—

1913-14.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).
569	705	435	112	163	1,237

Practically the whole of the imports represent woven coloured goods not separately classified in the Customs Returns, and consist of woven suitings, coatings, trouserings, etc., manufactured principally in Milan, which are very popular in the Punjab markets of Delhi and Amritsar. In these markets Italy is rapidly forcing her way into what was formerly a valuable British trade, and her progress seems to follow the lines of that already achieved in the South American markets.

Indian Mill Competition.—The question of Indian mill competition in yarns has already been considered. We will now deal with the competition in cloth. Here it is much more difficult to estimate the area of competition, as expert examination is required into the counts used in various Indian makes, which—speaking generally—are woven from coarser counts than the corresponding Lancashire qualities. The Government of India some few years ago endeavoured to estimate the approximate area of competition, and deputed an officer of considerable Customs experience to undertake the work. According to his investigations, the percentages of the imports of unbleached goods from Lancashire of those descriptions falling within the sphere of practical competition are as follows :—

	Quantity per cent.	*Value per cent.*
Shirtings and longcloths	90	90
Drills and jeans...	100	100
Chadars	80	75
Dhooties, saris and scarves	30	22

It should be mentioned, however, that dhooties are very difficult to estimate, and that the competitive limit is probably greater

than 30 per cent. The percentages for value in the above statement are duly weighted in consideration of the lower average value of the grades included.

As regards bleached cotton piece-goods, it is estimated that about 5 per cent. represents the area of practical competition. With regard to coloured goods of coarser counts the percentages would probably be :—

	Quantity per cent.	*Value per cent.*
Checks, spots and stripes	70	60
Dhooties	40	30
Drills and jeans...	100	100
Saris and scarves	20	16

Accepting these percentages, the proportion of imports falling within the sphere of competition during the five years immediately preceding the war would be as follows :—

Description.	Annual average of Imports (1909-10 to 1913-14).	Estimated proportion affected by Indian competition.	Estimated value of Imported Cotton Piece-goods affected by Indian competition.
	£	Per cent.	£
Grey (unbleached) :—			
Chadars	48,345	75	36,259
Dhooties, saris and scarves ...	6,905,037	22	1,519,108
Drills and jeans	301,645	100	301,645
Long-cloth and Shirtings ...	5,455,145	90	4,909,631
All other kinds	1,346,884	—	—
White (bleached)	7,468,859	5	373,443
Coloured, printed or dyed :—			
Checks, spots and stripes ...	90,266	60	54,160
Dhooties (including Lungis) ...	610,263	30	183,079
Drills and jeans	340,530	100	340,530
Saris and scarves	1,009,852	16	161,576
All other kinds...	6,581,066	—	—
Total	30,157,892	—	7,879,431

According to this calculation, therefore, the area of competition covers roughly a little over 26 per cent. of the total piece goods imports from Lancashire. My own impression is that this is an over estimate, and I would place the competition in bleached goods, for example, at much below 5 per cent. The calculation is of some value, however, and although I referred to it in my last report, I have again included the figures as it is the only earnest attempt which has been made to arrive at an estimate of the limits of competition. It is to be hoped that the Indian Tariff Commission, shortly to be appointed, will institute a thorough investigation by experts into the whole subject, as it is of the greatest importance both from Lancashire and Indian points of view.

Types of Goods woven in India.—A study of Appendix IX. (B), page 266, shows that the following are the principal types of cloth woven in Indian mills :—

Description.	1913-14.	1920-21.
Grey and bleached goods.	Yards.	Yards.
Dhooties	284,769,519	340,127,529
Shirtings and longcloth ...	292,487,741	456,239,812
T. cloths, domestics and sheetings	128,968,721	97,387,839
Drills and jeans	27,813,060	74,304,517
Chadars	69,870,506	59,194,229
Total grey and bleached goods	872,445,720	1,129,882,568
Coloured piece goods	291,845,868	450,967,178
Grand total	1,164,291,588	1,580,849,746

In the grey goods section the most notable increases are in shirtings and dhooties, both essentially Lancashire trades, and there is little doubt whatever that the coarser Indian qualities of both shirtings and dhooties made from heavy yarns are being substituted more and more for the British qualities. In drills and jeans, the Indian goods compete more particularly with Japanese qualities, and in the other headings of T. cloths and Chadars, Indian production has actually declined.

The advance in coloured piece goods is the most remarkable feature, an increase of no less than 159,121,310 yards or 54 per cent. The number of bleaching and dyeing plants ordered during the past few years has been very great and the leading British makers of this plant have been largely engaged on Indian orders ever since the Armistice. The machinery, in many cases, has only been delivered and erected during the past twelve months, so that its effects are not yet discernible. The great bulk of the coloured goods produced are not dyed in the piece, but are woven from dyed yarns, such for instance as the checks and stripes turned out in such large quantities in Bombay, Cawnpore and Madras. Some types of woven coloured goods are an object lesson of what can be done in India with enterprise and efficient management.

The Increased Import Duties.—The raising of the import tariff from March 1st, 1921, on all imported cotton piece goods from 7½ per cent. to 11 per cent. *ad valorem* is likely to curtail the import of British unbleached goods of the coarser qualities, as it will mean a net advantage to the Indian mills (after allowing for the 3½ per cent. excise duty) of no less than 7½ per cent., plus the natural protection they enjoy of the cost of shipment from the Lancashire mills to India, which is considerable in these days of high freights and handling charges. For example—taking all factors into account—it is estimated that the imposition of the extra 4 per cent. in 1917 involved in grey shirtings an advantage to Indian mills of no less than 9¾ per cent. The tendency towards the displacement of the coarser kinds of grey shirtings and dhooties imported is bound to be accelerated, and in the coarser end of the

trade Lancashire must inevitably suffer. The same applies to the lower grades of woven coloured goods. As I stated in my last report, we may also expect increased competition from both India and Japan in bleached goods. We should be able to retain all our trade in cloths of counts of 60's and above, such as mulls, nainsooks and the finer shirtings, which, so far, are not made either in India or Japan. In coloured goods (dyed in the piece), prints and novelties, we should easily hold our own. My personal opinion is that, on balance, our trade with India will continue to increase. The trade we lose in coarse grey goods will be more than made up by increased shipments of the finer cloths, due to the steady advance in the prosperity of the country. In China and the Far East the tendency towards an increased demand for the finer qualities and fancy goods, in which British manufacturers are pre-eminent, has been most marked. Although the general purchasing power of India is much lower, the standard of living is very slowly rising and the development of Indian industries will expedite this movement by raising the general level of prosperity.

Movement for a Protective Tariff.—The demand from industrialists in India, both European and Indian, for a protective tariff is most insistent. The home of the agitation is, of course, Bombay. In each annual address of the Chairman of the Bombay Millowners' Association, this question is raised, and one hears the same sentiments expressed elsewhere in India. The Indian industrialists are protectionists to a man, and there are very few European leaders of industry in India who would not welcome a protective import duty on their own particular commodity. The Government of India met this rising tide of feeling by promising to appoint an Indian Fiscal Commission to explore the whole problem during the coming cold weather. (*See* page 12.) Lancashire is vitally interested in the findings of the Commission. The possibility of increased duties in India is one which must be squarely faced. It is inevitable now that power is gradually being transferred to Indian hands. The more agitation there is in the United Kingdom, the closer become the ranks of the Indian politicians. In order to illustrate the current Indian opinion on this subject an extract from the Annual Address of the late Chairman of the Bombay Millowners' Association, delivered on April 19th, 1921, is given in Appendix X, page 270. I commend this to the serious attention of Lancashire manufacturers and shippers as it expresses views and sentiments which would be echoed by almost every Indian member of the Reformed Councils, who, after all, will be the main arbiters of India's destiny in these matters. The immediate reply to the recent Lancashire agitation against the increased duties was a motion in the Legislative Assembly that the duties should be further increased to 12½ per cent. This was negatived, and I merely mention the fact to show how tactfully these problems need to be treated in view of the completely altered political position in India. It is very undesirable that anything should be said or done which might prejudice the case for Imperial Preference in the minds of Indian politicians, who, it must not be forgotten, are in the majority in the Indian Legislature to-day.

With the true interests of Lancashire at heart, I would close this section with a plea for careful study of the present political situation in India, so that the practical effect of the recent reforms may be appreciated, and so that, in future, the difficult situations which are bound to arise may be approached with greater knowledge of the power and force of the factors which are behind them, and of how they may best be met in the light of changed conditions in India.

Cotton Sewing Thread.—There has been a considerable increase in the imports of sewing cotton during the past year, and it is satisfactory to note that British makers are still pre-eminent in this trade. The imports were :—

Country of origin.	1919-20.		1920-21.	
	lbs.	£	lbs.	£
United Kingdom ...	907,585	447,539	1,310,720	846,173
Japan	137,069	37,849	41,396	11,266
Other Countries ...	30,465	10,159	144,010	54,529
Total Imports ...	1,075,119	495,547	1,496,126	911,968

Japanese imports were purely a war development, and this competition has now subsided. The British distributing organisation is all that is required, and there should be little difficulty in maintaining our position.

Flax Manufactures.—The main type of flax manufactures imported were as follows :—

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Twist and Yarn	550	1,711	6,068
Canvas	143,367	267,717	391,058
Piece goods	14,802	36,184	53,663
Sewing thread	18,415	49,501	46,807
Other kinds (including bags and sacks)	23,253	68,652	105,891
Total Imports ...	200,387	423,765	603,487

The imports of yarn are trivial, and are entirely drawn from the United Kingdom. The most important trade is that in canvas, of which, before the war, the United Kingdom contributed the entire imports. In 1919-20 the British share was 74 per cent., and the Japanese proportion 25 per cent. Japanese imports have increased steadily during the past five years. Calcutta is the largest market. The linen piece-goods imported are principally of the finer qualities, and this largely accounts for the fact that

the trade is almost entirely British. Shipments of £3,354 were received from Japan in 1919-20, but our makers should continue to control this trade without much competition. The imports of sewing thread are also predominatingly British (£46,289 of £49,501), thanks to the local organisation of the leading British company. In 1918-19 Japan shipped £5,976 and in 1919-20 £3,171 worth of linen thread, but British makers should be able to meet Japanese competition without very great difficulty. Under the heading " other kinds," Great Britain supplied 88 per cent., Japan 8 per cent., and the United States of America under 2 per cent. The trade in linen bags and sacks has fallen to negligible proportions, less than £1,000 worth being imported in 1919-20, of which China supplied the greater portion. It has been proved that there are possibilities in India for the production of flax on a considerable scale, but so far very little has been done and there is no flax manufacturing industry.

Jute Manufactures.—It seems extraordinary that jute manufactures should still be shipped to India, but there is still a trade in the finer qualities of gunny bags and jute canvas. The latest figures are the following :—

Principal Sources of Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	50,566	150,142	158,088
Ceylon...	80,354	74,756	79,109
Japan	51,307	26,659	13,086
Total Imports ...	200,148	269,390	262,878

In 1919-20 the imports of jute canvas amounted to 524,535 yards valued at £96,831. The United Kingdom supplied £71,270, and Japan £25,411. In normal pre-war times the whole of the canvas imported came from the east coast of Scotland, but, during the war, Japan increased her shipments until 1917-18, since when she has steadily declined, and the only serious competition Scottish makers of canvas now have to meet is that from the Calcutta mills, which are making great advances in the finer jute fabrics and are beginning to enter trades such as the canvas and fine Hessian trades which they did not touch before the war. As regards gunny bags, the trade is now divided between Ceylon and the United Kingdom. In 1919-20 Ceylon shipped £63,305 and the United Kingdom £59,959 of a total of £127,839.

The imports of gunny cloth were only £16,778, of which £11,136 came from Ceylon and £5,336 from the United Kingdom. The trade in rope and twine is also very small. Of a total import of £9,540, the United Kingdom contributed £4,234, Sumatra £2,797 (this was quite exceptional), and Australia £1,493.

Other kinds of jute manufactures accounted for £17,599, of which the United Kingdom sent 50 per cent., Straits Settlements

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27 per cent., Java 17 per cent. (quite exceptional), and Japan 6 per cent.

Silk Manufactures.—Although this is a trade in which the United Kingdom has a comparatively very small share, India is such an important market that it deserves special comment. The imports of the various types were as follows :—

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Silk yarns, noils and warps ...	381,094	320,854	824,788
Goods of silk mixed with other materials.	202,090	195,501	512,314
Silk piece goods	1,833,037	5,239,917	4,106,964
Sewing thread	3,667	4,271	10,719
Other kinds	52,786	163,783	138,341
Total Imports ...	2,472,674	5,924,326	5,593,126

Eighty-four per cent. of the imports of yarns, noils and warps in 1920-21 were obtained from Japan, and the balance mainly from China and Italy.

Silk Mixtures.—The trade in silk mixtures is much more evenly shared as will be seen from the following table of imports :—

Country of origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	26,277	52,882	95,675
France...	131,032	57,846	79,351
Italy	29,136	30,719	109,516
Other countries	15,645	54,054	227,772
Total Imports ...	202,090	195,501	512,314

Among other countries are included Switzerland, Japan and Hongkong. In the last pre-war year the United Kingdom shipped £128,250 worth of silk mixtures, and it is satisfactory to note that we are gradually regaining our position.

Silk Piece-Goods.—The import of silk piece-goods is enormous, as it is a favourite article of apparel among Indians, being light, cool and durable. The following are the latest statistics :—

Country of origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	28,282	40,658	107,951
France...	17,366	23,419	53,528
China (including Hong Kong)	711,915	2,189,152	1,645,778
Japan	1,064,996	2,954,457	2,204,277
Total Imports ...	1,833,037	5,239,917	4,106,964

France, Switzerland and the Straits Settlements also send small quantities. As might be expected, the imports are mainly of light pongees, suitable for men's garments. The average value per yard imported during the past three years works out as follows :—

1918-19	... ...	Rupees 1.5 per yard
1919-20	... ...	,, 1.8 ,,
1920-21	... ...	,, 1.8 ,,

The import of silk sewing thread is only a small trade, and is entirely in the hands of the United Kingdom. Other kinds of manufactured silk are principally drawn from the United Kingdom and the United States.

Woollen Manufactures—

Yarns and Knitting Wool.—The total imports were as follows :

1918-19.		1919-20.		1920-21.
£121,596	...	£59,449	...	£247,343

The imports are almost entirely of knitting wools of the type known as " Berlin wool," and were formerly supplied by Germany and Austria. It is satisfactory to note that the British share increased during the war, and in 1919-20 the United Kingdom supplied 67 per cent. and Japan 32 per cent. Whether we shall be able to hold the position in face of future German competition is doubtful. Japanese imports were considerable during the war, but it is doubtful whether their quality will compete successfully with that from Central Europe when normal conditions recur. There is practically no demand in India for the staple woollen and worsted yarns which are produced in the West Riding of Yorkshire.

Carpets and Rugs.—The following Table shows the imports of carpets and rugs during the past three years :—

Country of origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	25,485	52,763	132,676
Persia	13,487	86,974	40,952
France...	1,056	5,921	Not available.
United States...	194	4,072	,, ,,
Total Imports ...	43,143	157,234	200,672

The striking British recovery in the trade is most encouraging, and taking into account the fact that Persian and Turkish carpets are non-competitive, it may be estimated that Great Britain in 1920-21 supplied at least 90 per cent. of European or American manufactured carpets and rugs. The United Kingdom has always supplied the market with the leading makes for the European and best Indian demand, and is likely to continue to do so.

Before the war, German competition in low-priced printed tapestry carpets was very keen. The principal competition will always be with Indian carpets manufactured at Mirzapur, Agra, Amritsar and other places, and also in Kashmir. The quality of Indian carpets has improved of late years, and definite efforts are now being made to render them popular in India as well as abroad. The marketing organisation is being largely improved, and the sale is tending into the hands of European organisations with branches in the carpet weaving centres and agencies all over the world.

Woollen Shawls.—The trade in imported cashmere shawls was most important before the war, and was mainly in the hands of Germany and Austria. In 1913-14 2,100,748 shawls were imported, valued at £376,113. Owing to the temporary elimination of the Central Powers from the business, the trade has steadily fallen away until in 1920-21 only 16,272 shawls, valued at £11,828 entered India. Of these, 11,622, valued at £7,619, were obtained from the United Kingdom, and 4,650, valued at £4,209, from foreign countries.

Woollen Piece-Goods.—The imports were as follows :—

Country of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	1,046,904	1,190,319	4,118,698
Japan	102,209	47,235	201,552
Total Imports	1,168,315	1,266,749	4,611,780

Before the war the greatest competitors of the United Kingdom were Germany and France, and the imports from Japan in 1913-14 were a paltry £78 worth. Japanese competition now is becoming insistent in the lower qualities. Serious competition is met with from the Cawnpore Woollen Mills Co., Ltd., and the one or two lesser concerns in the country. These mills are turning out good quality serges and other fabrics made from Australian wool, well dyed and finished, and obtainable in a wide range of shades. Several other woollen mills have been promoted in Bombay and other centres, and local Indian competition will be much keener in future.

Iron and Steel.—Iron and steel comes third in order of importance in the import trade of India, being exceeded only by cotton textiles and sugar. Inasmuch as virtually the whole of the sugar imports are obtained from Java and that sugar is not a competitive article so far as the United Kingdom is concerned, I do not propose to deal with it. The imports of iron and steel have shown great expansion in the past two years, although they are still, in weight, far below the pre-war figures.

The following Table gives the sources of origin in pre-war and recent years :—

Imports of Iron and Steel.

Year.	From the United Kingdom.	From Germany.	From Belgium.	From the United States.	From Japan.	From other countries.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1913-14	611,300	200,100	171,000	22,000	—	13,800	1,018,200
1918-19	76,900	—	—	76,100	15,300	13,100	181,400
1919-20	269,300	900	13,200	134,500	2,200	6,800	426,900

The statistics available for 1920-21 do not permit of classification in this way, so I propose to show the origin of the imports according to the class of iron and steel imported, which will be useful as showing precisely where foreign competition is most serious.

Description.	From the U.K.	From U.S.A.	From Belgium.	Total Imports.
	Tons.	Tons.	Tons.	Tons.
Iron—Bar and Channel ...	11,580	1,153	—	19,514
Iron or Steel—				
Beams, pillars, girders and bridgework.	63,696	6,471	—	78,360
Bolts and nuts	6,505	1,176	—	8,350
Hoops and strips	18,850	3,746	—	23,231
Nails, rivets and washers (other than wire nails).	7,450	1,022	719	13,147
Cast pipes and fittings ...	20,536	4,288	—	25,116
Galvanized sheets and plates ...	59,920	6,530	—	66,633
Tinned plates	44,897	4,329	—	49,934
Plates not galvanized or tinned.	67,283	20,478	7,588	98,791
Wrought tubes, pipes and fittings.	19,813	21,192	—	42,219
Wire nails	1,935	2,720	—	9,445
Steel bars and channel	77,626	16,322	—	147,996

The total quantities of iron and steel imported showed most satisfactory increases each year, although they are still considerably below pre-war figures. The outstanding feature of both 1919-20 and 1920-21 is the remarkable recovery made by the United Kingdom, particularly in the latter year, whereas the imports from the United States in the last year under review remained fairly stationary. Dealing with the various articles in turn for 1920-21 as compared with the previous year and confining ourselves to quantities, which is the safest criterion, we find that in beams, pillars, girders and bridgework imports from the United Kingdom more than trebled, while those from the United States increased in the same proportion. In bolts and nuts, there was also a threefold increase from the United Kingdom, whereas American imports were reduced by 600 tons. In hoops and strips British supplies increased by over 2,000 tons, against a decline in the American product of over 7,000 tons. As regards nails, rivets, and washers (other than wire nails) British shipments

doubled, whereas American supplies decreased by half. Sweden shipped 1,786 tons, Norway 1,581 tons, and it is interesting to note the re-entry of Belgium nails into this market, with 719 tons. In cast pipes and fittings British supplies increased by 12,000 tons and American by 2,000 tons. It is most satisfactory to note that in the enormous trade in galvanised sheets and plates, which totalled 66,633 tons, valued at over £3,000,000, the United Kingdom is still supreme, her share of the trade being 59,920 tons, valued at £2,753,000, or 90 per cent., America supplying the remaining 10 per cent. In tinned plates also, the United Kingdom increased her shipments by 15,000 tons and now supplies 90 per cent., whereas the American shipments declined by over 8,000 tons to 4,329 tons, or 8 per cent. Plain steel sheets is the second largest item in India's imports of steel, accounting for over 98,000 tons, of a value of £3,834,000. Of this trade the United Kingdom supplied 67 per cent., the United States 20 per cent. and Belgium over 7 per cent. Here again there was a most satisfactory increase of nearly 20,000 tons from Great Britain. As regards wrought tubes, pipes and fittings, the position of the United Kingdom *vis à vis* the United States was greatly improved. By dint of an increase in British shipments of 9,000 tons and a falling-off in American supplies of 4,000 tons, the relative shares in the trade are now 47 per cent. and 50 per cent., as compared with 29 per cent. and 70 per cent. a year ago. America, however, still leads, but it is hoped that by next year the position may be reversed as this and wire nails appear to be the only two items in which American shipments to India are greater than our own. As regards wire rope, both galvanised and black, it is a pity that detailed figures for 1920-21 are not yet available. In 1919-20, however, British shipments of galvanised wire rope were 1,177 tons compared with 145 tons from the United States of America, while in the case of ordinary black wire rope the figures were 1,991 and 77 respectively. Japan also supplied 53 tons. In wire nails British shipments advanced from 384 tons to 1,935 tons concurrently with an American decline from 5,963 tons to 2,720 tons. No less than 4,790 tons were derived from other countries not separately classified, but of which it is to be supposed that Belgium supplied the bulk.

We now come to the largest and most valuable import of steel, viz., bars and channels, of which, normally, steel bars account for over 96 per cent. The British share increased from 34 per cent. to 52 per cent., while the American declined from 50 per cent. to 11 per cent. It should be noted, however, that the share of other countries increased by no less than 43,000 tons, of which imports of Belgian bars at very low prices accounted for the greatest part. The total imports were 148,000 tons, valued at £4,720,000. In Appendix XI(A), page 274, will be found a statement giving the imports and also the declared value of the various kinds of iron and steel imported in 1919-20. Unfortunately, corresponding statistics for last year are not yet forthcoming.

Other Metals.

Aluminium.—The total imports of aluminium were as follows :—

Description.	1918-19.		1919-20.		1920-21.	
	Cwts.	£	Cwts.	£	Cwts.	£
Unwrought, Ingots, blocks and bars.	9,129	98,019	8,195	65,532	18,131	164,772
Wrought Circles	2,462	50,616	14,034	177,015	31,236	496,730
Sheets					8,979	130,684
Other Manufactures ...	48	578	955	10,951	4,291	84,353
Total Imports ...	11,639	149,213	23,184	253,498	62,637	876,539

In 1919-20 the imports came as to 65 per cent. (value) from the United Kingdom, 22 per cent. from Japan and 10 per cent. from the United States. Detailed figures for 1920-21 are not yet available, but it is expected that the United Kingdom has increased her lead during the period. There are one or two factories in India which do a large trade in working up the imported sheets and circles into the miscellaneous variety of utensils and containers in demand in India, and it is satisfactory to note that the largest aluminium manufacturing firm in the United Kingdom are taking steps to erect their own works in India.

Brass, Bronze and similar Alloys.—The principal imports were :—

Description.	1919-20.		1920-21.	
	Cwts.	£	Cwts.	£
Unwrought	141,166	491,131	110,701	387,903
Wrought, mixed or yellow metal for sheathing.	150,852	1,140,241	341,673	3,043,244
Other sorts...	98,599	674,041	109,223	888,891
Total Imports	390,617	2,305,413	561,597	4,320,038

The principal trade is in mixed or yellow metal for sheathing, of which the United Kingdom holds 81 per cent. and Japan 5 per cent. As regards unwrought brass, the United Kingdom practically controls the trade, but Japanese competition is severely felt in other sorts. The factory which was commenced in Calcutta during the war to produce brass fittings, taps, cocks, hydrants, etc., has not met with great success, and this would not appear to be a type of industry which could normally meet overseas competition.

Copper.—The following are the figures for 1920-21 :—

Description.	From U.K	From Japan.	From France.	Total.
	Cwts.	Cwts.	Cwts.	Cwts.
Unwrought	24,555	3,355		27,955
Wrought	118,636	5,303	9,446	258,053

with a total import of all kinds of copper (excluding ore) of 288,583 cwts. During the past two years there has been a great increase in the amount of copper (both unwrought and wrought) imported from the United Kingdom with a corresponding increase in the import from unspecified other countries, which is probably accounted for by direct shipments from the United States.

Lead.—The imports of lead ore and pig lead, which are inconsiderable, are almost entirely derived from the United Kingdom. There is a considerable trade in lead sheets, pipes and tubes, which in 1920-21 amounted in quantity to nearly 23,000 cwts., valued at £79,000. The United Kingdom is the principal supplier, with America competing to an increasing extent.

The principal imports are of lead sheets for tea chests, and the following table shows the origin of the imports during the past two years :—

Origin.	1919–20.		1920–21.	
	Cwts.	£	Cwts.	£
United Kingdom ...	29,884	59,805	23,828	85,072
Ceylon	13,275	38,534	6,596	19,713
Japan	219	1,404	—	—
Other countries ...	—	—	—	—
Total Imports ...	43,378	99,743	30,424	104,785

Lead rolling mills are successfully worked both in Colombo and also in Bengal, and inasmuch as India (Burma) is a large producer of lead, it would appear to be only a question of time before India produces all the lead sheets required for her tea chests.

Tin.—The bulk of the trade is in unwrought tin in blocks, ingots, bars and slabs, wrought tin accounting for only 806 cwts., value £10,000. The figures for unwrought tin are as follows :—

Origin.	1919–20.		1920–21.	
	Cwts.	£	Cwts.	£
United Kingdom ...	949	16,262	2,541	41,346
Straits Settlements ...	44,268	740,219	37,851	605,227
Other countries ...	1,618	23,736	1,391	12,232
Total	46,835	780,217	41,783	658,805

Other countries in 1919-20 included a shipment of 1,189 cwts., from Java.

Zinc or Spelter.—The figures for unwrought zinc or spelter are as follows :—

Origin.	1919–20.		1920–21.	
	Cwts.	£	Cwts.	£
United Kingdom ...	98,633	313,485	33,764	102,641
Australasia	630	3,270	4	2
Japan	5,825	18,002		
Other countries ...	12,515	36,212	2,754	7,634
Total	117,603	370 969	36,522	110.277

Other countries include Belgium and the United States of America. As regards wrought zinc, the imports in 1920-21 amounted to 40,000 tons, valued at £182,000. Towards the end of the war, Japan supplied the bulk of the wrought zinc, but the United Kingdom has now regained her former position, the principal competitors being Belgium and United States of America.

In Appendix XI(B), page 275, will be found a table showing the provenance of the principal metals imported during the last pre-war year and also during the four years ending 1919-20. Some idea of the value of the Indian metal market may be obtained from the following table :—

Total Imports of Metals of all kinds into India.

	Tons.	£
1918-19	202,845	10,701,435
1919-20	477,500	22,725,793
1920-21	769,044	40,656,642

Of the above total values in 1918-19 the United Kingdom supplied 30 per cent., in 1919-20 63 per cent., and in the last year under review it is hoped that her share will be between 70 and 80 per cent.

Machinery and Millwork.—The following table shows the origin of the imports of machinery and millwork in the last pre-war year and during the past three years :—

Countries of Consignment.	1913-14.	1918-19.	1919-20.	1920-21.
	£(1,000).	£(1,000).	£(1,000).	£(1,000).
United Kingdom ...	4,639	2,139	5,916	17,522
United States... ...	168	928	2,798	4,025
Japan	10	164	85	121
Italy	4	14	21	—
Germany	288	—	—	—
Austria-Hungary ...	13	—	—	—
Other countries ...	50	91	198	709
Total Imports ...	5,172	3,336	9,018	22,377

The most striking features shown above are the prodigious expansion in the total imports of machinery into the country and the remarkable recovery made by the United Kingdom. Before the war, Great Britain supplied 89 per cent. of the total imports. In 1918-19 her share, owing to the war, had fallen to 64 per cent. In 1919-20 an increase of only 1 per cent. is noticeable owing to the inability of British manufacturers to give early delivery, whereas American makers were not so handicapped. During the past year, however, imports of British machinery have not only expanded by over eleven millions sterling but the percentage share has advanced to 78 per cent. of the total.

The great increase in the imports of machinery and plant into India last year is due firstly to the making good of the depreciation of plant during five years of war, and secondly to the great demands as a result of the industrial renaissance in the country. In my last Report I dealt with the question of the development of Indian Industries at considerable length and outlined the probable effect on imports of plant. It will, therefore, not be necessary to touch upon it here. The following table is interesting as it shows the principal types of machinery imported and the statistics with regard to each :—

Description.	1918–19.*	1919–20.	1920–21.
	£	£	£
Prime Movers (other than Electrical)...	166,749	708,589	2,448,764
Electrical Machinery	260,458	1,240,680	2,188,587
Boilers	151,328	514,411	1,587,413
Boot and Shoe Manufacturing Machinery.	included in "other sorts."	—	46,577
Leather Tanning and Curing Machinery		—	82,238
Machine Tools		—	1,382,388
Mining Machinery	72,807	155,746	297,618
Oil Crushing and Refining Plant ...	32,919	120,858	77,477
Paper-Mill Machinery	40,798	97,775	319,126
Rice and Flour Mill Machinery ...	48,547	118,264	554,832
Saw Mill and Woodworking Machinery	32,569	76,413	182,474
Sewing and Knitting Machines and parts thereof.	184,332	546,377	680,578
Sugar Machinery	8,234	43,253	175,531
Tea Machinery	100,508	223,442	391,074
Textile Machinery			
Cotton—			
Spinning Machinery			1,508,850
Weaving Machinery	1,102,148	1,307,626	1,504,676
Bleaching and Dyeing Machinery ...			542,123
Printing Machinery			29,692
Other sorts			603,144
Jute Machinery...	380,402	1,477,699	2,776,731
Shuttles (excluding those for sewing machines).	—	92,146	143,060
Other Sorts	46,506	47,256	133,976
Typewriters	78,896	181,168	363,314
,, parts and accessories ...	16,872	28,338	35,605
Other sorts of Machinery	611,434	2,038,141	4,836,293

* From the "Annual Statement of Seaborne Trade of British India for the year ending 31st March, 1920. Vol. I."

It is not possible to give detailed figures of the origin of the imports of each specific type of plant. It is highly satisfactory to be able to note, however, that the United Kingdom last year regained her position as the principal supplier of electrical machinery, her shipments being valued at £1,490,473 as compared with £665,843 from the United States. Typewriters and parts and accessories thereof are the only two headings under which American shipments are the greatest, and in these lines the United States has a virtual monopoly and supplies roughly 95 per cent. of India's requirements.

Railway Plant and Rolling Stock.—*Imports of railway plant and rolling stock.**

——	1913–14.	1916–17.	1917–18.	1918–19	1919–20.	1920–21.
	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000)
Private—						
United Kingdom...	6,219	968	311	642	4,093	13,478
Australia	195	—	—	—	6	—
Germany	201	—	—	—	—	—
Other countries ...	75	78	20	54	488	652
Total ...	6,690	1,046	331	696	4,587	14,130
Government—						
United Kingdom...	2,665	155	316	424	2,164	Not available.
United States ...	1	8	1	—	2,298	
Australia	13	—	—	—	—	
Other countries ...	6	—	10	—	—	
Total ...	2,685	163	327	424	4,462	2,292.

As was anticipated in my last Report the shipments of railway plant and rolling stock during the past two years have been on an immense scale. The budget appropriation for railways in 1919-20 was no less than £18,000,000 in order to meet the alarming depreciation of the war.† Unfortunately, owing to the shortage of funds in India, this programme has not been carried out subsequently in its entirety, and despite the heavy shipments recorded above, Indian railways are still on the whole seriously short of rolling stock, particularly of carriages and wagons, and when the question of ways and means has been settled there is no doubt that further large contracts must be placed. It will be observed that the United Kingdom has more than maintained her position, the only competition being from Japan in vacuum brake fittings, and also from the United States in wagons. It should be explained, however, that the American wagons imported were originally constructed for the Russian railways during the war and were sold to the Government of India after the collapse of Russia. The whole transaction may therefore be considered to be exceptional and certainly not competitive. It should be noted that the Baldwin Locomotive Company now have a representative in India.

All things considered, it is likely that British suppliers will hold their own in this immense trade. (Shipments from the United Kingdom in 1920-21 were £15,000,000). The only competition which seems likely is that of Indian manufactured stores.‡ If an efficient stores organisation, as outlined in Chapter V, is set

* Railway plant and rolling stock includes carriages and wagons, locomotive engines and tenders, and materials for construction, viz :—bridgework, rails, chairs, fishplates and sleepers and keys of steel or iron and sleepers of wood, etc.

† About £14,000,000 only was spent, mainly owing to labour difficulties in the United Kingdom.

‡ In a Press communiqué dated October 1st, 1921, it was announced that the Government of India will in future invite tenders annually in India for all the railway locomotive engines required by Government during the 12 years commencing with 1923.

up in India, strong pressure will probably be brought to bear on the company-worked lines to make use of this organisation. The policy of gradually extinguishing the Indian Railway Companies now domiciled in England and transferring to India the management of their undertakings has been recommended by the Indian Railway Committee which toured India last cold weather. Should this eventuate, British suppliers will be forced to establish themselves in the country.

In any case, more severe competition will be experienced from the railway workshops which have been largely extended during the war, and which—once adequate supplies of steel sheets, plates, billets, etc., are manufactured in the country—will make a still larger proportion of their own requirements. At the present time practically all the steel rails required are being rolled in the country at the Tata Steel Works.

Government Stores.—This question has been dealt with fully in Chapter V, where details are given of the imports of Government stores over a considerable period. During the past three years there has been a steady decline in the import of stores owing to the great reduction in the demand for military stores after the end of the war, which has more than off-set the increased purchases of railway plant and rolling stock. The present position will be seen from the following table of the imports during the past three years :—

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Apparel (including Drapery, Uniforms and Accoutrements).	1,194,300	421,621	83,433
Arms, Ammunition and Military Stores ...	952,944	1,043,608	451,170
Carriages and Carts	120,623	375,134	693,021
Chemicals	176,553	111,029	107,079
Drugs, Medicines and Narcotics	151,755	200,946	210,947
Hardware and Cutlery (including agricultural implements and plated ware).	693,766	870,021	867,785
Instruments, Apparatus and Appliances and parts thereof.	306,939	419,120	602,794
Machinery and Millwork	255,025	447,039	801,045
Iron and Steel	407,168	728,657	884,303
Copper	569,486	586,241	450,973
Paper and Pasteboard	61,842	131,834	97,744
Printing and Lithographic Materials ...	15 276	26,972	42,564
Railway Plant and Rolling Stock—			
Carriages and Wagons and parts thereof	294,041	3,577,878	1,003,319
Locomotive Engines and Tenders ...	122,239	440,697	1,219,787
Rails (Fishplates, steel or iron)	217	409,335	56,551
Total Railway Plant and Rolling Stock	423,526	4,462,048	2,292,153
Ships, parts of, including launches and boats	12,317	19,522	81,785
Stationery (excluding paper)	205,237	271,289	280,490
Telegraphs, materials for construction of...	141,626	578,977	343,468
Textiles, Cotton	545,632	297,137	51,756
„ Flax	294,899	297,255	92,129
„ Wool	2,423,766	689,553	48,248
All other articles	3,531,631	1,311,340	1,310,651
Total Imports	13,018,859	13,730,048	10,538,398

In 1919-20 the share of the United Kingdom was 93 per cent., as against 70 per cent. in 1918-19. That of the United States was 19 per cent., as compared with 1 per cent. the previous year, while the proportion supplied by Australia declined from 26 to 3 per cent.

Motor Vehicles.

Motor Cars.—Number of motor cars imported :—

Year.	From the United Kingdom.	From the United States.	From France.	From other countries.	Total.
1913-14 (pre-war) ...	1,669	868	111	232	2,880
1914-15	1,350	510	54	91	2,005
1915-16	787	2,136	126	72	3,121
1916-17	489	4,169	62	58	4,778
1917-18	39	1,222	1	20	1,282
1918-19	21	368	—	11	400
1919-20	448	9,353	3	121	9,925
1920-21	2,541	10,120	192	2,579	15,432

It will be observed that the United Kingdom largely increased her shipments, although they are far below those of the United States. Expressed in values, however, the discrepancy is not quite so great, as the average value of the British car imported was £840 against an average of £445 in the case of the American. The latest figures show an import from Canada in 1920-21 of 1,938 cars valued at £612,558. These represent almost entirely Ford cars manufactured in Canada. There is no doubt whatever that the relatively low-priced American car has come to stay, as its price is within the reach of the greatest number of buyers, and it is now in general use in India as a taxicab and also as a runabout for office use and on estates, etc., up country. There is, however, always a steady demand in India among a certain number of Europeans and wealthy Indians for a high-grade car of the best workmanship and this trade is almost entirely in British hands. The greatest demand, however, is for the medium-priced car at from Rs.5,000 to 7,500 and at present this is almost entirely an American trade. There is no reason, however, why British makers should not secure a much larger share of this business if only they can bring their prices down to the required level and can give an adequate service. In my last report I dealt very fully with the question of service and representation, and I am glad to say that several leading manufacturers have acted on the lines suggested and have inaugurated a widespread selling organisation in India.

Motor Cycles.—So far as motor cycles are concerned, the British position is much more satisfactory, as is shown by the following table :—

Origin.	1919-20.		1920-21.	
	Number.	£	Number.	£
United Kingdom	1,259	92,567	3,744	400,399
United States	1,014	71,729	1,236	118,739
Other Countries	59	4,271	199	15,862
Total Imports	2,332	168,567	5,179	535,000

The standard British makes are all well represented and the trade is on a sound footing. The average value of the British motor cycle imported was £106, as compared with £96 in the case of the American machine.

Motor Lorries.—The imports of motor lorries and trucks show a considerable increase from 1,229 valued at £483,509 in 1919-20 to 2,947 valued at £2,234,318 in 1920-21. In the former year the United Kingdom only supplied 197 lorries of a value of £158,424, whereas the United States shipped 936 trucks valued at £269,534. As the average value of the British lorry was £842 compared with £287 in the case of the American, it is probable that the bulk of American imports consisted of Ford one-ton trucks. It is regrettable that the detailed figures for 1920-21 are not yet available, as it is certain that they will show an enormous increase in the British share of the trade. One of the leading British manufacturers has a large organisation in India with assembling and repair shops, etc., and a widespread selling organisation, and at one time during the past year was advertising 100 lorries from stock in Calcutta. Others are strongly represented by merchant agents, some of whom are also connected with local transport companies, which is a valuable adjunct.

The era of motor transport in India has arrived, and at almost every port and large centre the motor lorry is slowly but surely replacing the archaic bullock cart. One transport company in Calcutta has recently been running a cargo service to the coal-fields, more than 200 miles away. Regular motor bus services are gradually coming in, not so much in the coast towns, as the local tramways are still powerful, but in places like Delhi and from the plains to the hill stations. The Post Office is also a large purchaser, and the mail motor van services are bound to increase. The future in India is very bright for all classes of vehicles from the light 1-ton truck to the heavy British lorry of 3, 4 and 5 tons.

Provisions.—The following table shows the value in thousands of pounds sterling of the imports of provisions into India during the last pre-war year and during each of the past three years :—

Countries of Consignment.	1913–14.	1918–19.	1919–20.	1920–21.
	£(1,000).	£(1,000).	£(1,000).	£(1,000).
United Kingdom	1,007	221	1,154	1,790
Straits Settlements	191	273	530	419
Australasia	27	258	269	225
Holland	93	3	54	118
United States	33	413	625	712
Other Countries...	298	124	277	346
Total Imports	1,649	1,292	2,909	3,610

The dominant features in the trade during the past two years are the remarkable recovery made by the United Kingdom, which is rapidly regaining its pre-war position (62 per cent. in 1913-14, 49 per cent. in 1920-21), the maintenance of their recently-won position by the Straits Settlements and Australia, and the steady progress of America as a competitor. The British Empire now supplies 72 per cent. of India's demands, and it is to be hoped that Canada, with her immense resources, and producing as she does many of the products such as canned and bottled goods now imported from the United States, will be able to increase her share of the trade now that she has the advantage of a direct steamship service. There is little improvement to record in Canada's shipments, as the following somewhat melancholy table only too clearly shows :—

1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.	1919–20.
£ 4,994	£ 3,052	£ 2,885	£ 270	£ 17	£ 664	£ 209

The most important articles imported are the following :—

Principal articles.	Average of 5 years 1909–10 to 1913–14.	1918–19.	1919–20.	1920–21.
	Cwts.	Cwts.	Cwts.	Cwts.
Farinaceous and patent foods ...	255,900	267,000	271,000	255,000
Canned and Bottled Provisions ...	86,100	81,400	138,400	134,325
Biscuits and Cakes	72,900	6,200	47,300	41,861
Milk (condensed and preserved), including Milk Cream.	103,300	41,600	67,700	61,759
Jams and Jellies	17,400	16,500	7,100	16,658
Bacon and Hams	14,500	6,900	14,300	8,216
Cocoa and Chocolate	4,600	5,900	9,600	7,154
Cheese	11,700	4,200	7,300	10,558

It will be of interest if we deal with the principal articles in turn. The figures and percentages given are those for 1919-20, the last year of which we have detailed returns.

Bacon and Hams.—The import of bacon and hams more than doubled, the principal sources of supply being the United Kingdom (47 per cent.), the United States (27 per cent.) and Australia (24 per cent.).

Biscuits and Cakes.—There has been a large increase in the imports of biscuits and cakes, although in weight they are still far below the pre-war level. Prices have been so high that this has probably checked the demand. The United Kingdom supplied 80 per cent., Australia 12 per cent. and Japan 5 per cent. It is satisfactory to note that Great Britain has regained her pre-war position, and there would appear to be some diminution in the imports of Japanese low-grade goods. Biscuits of a coarse quality are being made in India, but the output has so far not interfered with the import trade. The leading British makers are so actively represented, and their brands and packings so well known in the market, that there would appear to be little to fear from either Indian or foreign competition. In 1919-20 the United States supplied only 30,000 lbs. weight, valued at £3,000.

Butter and Cheese.—The imports of butter, almost entirely in tinned form, are very small, and amounted only to 72,435 lbs., valued at £14,862. Denmark supplied 50 per cent., Australia 20 per cent. and the United Kingdom 9 per cent. Shipments of cheese are on a slightly larger scale, amounting to 817,686 lbs., valued at £85,655. Holland supplied 50 per cent., the United States 23 per cent. and Australia 20 per cent. Only £3,672 worth, or 4 per cent. of the imports were obtained from the United Kingdom.

Cocoa and Chocolate.—Imports increased to a value of £143,082 last year. The most striking feature is the increase in shipments from both the Atlantic and Pacific coasts of the United States of late years. Prior to 1917-18 American cocoa and chocolate were practically unknown in India. The imports in that year were £2,249, in 1918-19 £45,368 and in 1919-20 £40,703. The United Kingdom, in 1919-20, supplied 56 per cent., the United States 33 per cent. and Holland 4 per cent. In view of the established position of the British-made commodity before the war, it would be as well if our makers were to institute special inquiries into the increasing competition from America.

Farinaceous and Patent Foods.—This is a very large trade, inasmuch as under this heading are included Oriental food products, such as tapioca, which are imported from the Straits Settlements. Of the total imports of £633,304, £388,577, or 63 per cent., were derived from the Straits; £130,345, or 20 per cent., from the United Kingdom and £86,469, or 13 per cent., from America. The British and American imports consisted largely of patent foods.

Jams and Jellies.—The Empire has a firm hold on this trade, 66 per cent. of the imports being drawn from Australia and 20 per cent. from the United Kingdom. The only foreign competition is from America, which supplied a trifle over 10 per cent.

Condensed and Preserved Milk.—Total imports were 7½ million pounds, valued at £402,000. Burma is the principle market. America supplied 33⅓ per cent., Australia 17 per cent. and the United Kingdom 12 per cent.

Pickles, Sauces and Condiments.—The total trade is worth £58,000, of which the United Kingdom supplied £44,000, Australia £3,758, United States of America £3,777 and the Straits Settlements £3,439.

Canned and Bottled Provisions.—This is the largest item in the provision trade, and is steadily expanding. Out of a total value of £728,263, the United Kingdom furnished 51 per cent., Australia 6 per cent. and the United States 31 per cent. The following table shows the extraordinary expansion in American shipments, of which the bulk are drawn from California :—

——	1913–14.	1915–16.	1916–17.	1917–18.	1918–19.	1919–20.
United States—	£	£	£	£	£	£
Atlantic Coast ...	7,260	6,842	22,135	31,164	36,451	77,259
Pacific Coast ...	12,876	22,976	52,190	104,470	139,097	149,544
Total	20,136	29,818	74,325	135,634	175,548	226,803

It is probable that the imports from America for 1920-21 will also show a considerable increase in view of the all round advance in her shipments of provisions to India. As I stated in my last report, this valuable trade has been gained largely by the excellence of the canning and bottling, the quality and neat design of the containers, the neatness and artistic character of the labels, and the general attractive nature of the make-up. Moreover, the American houses have fostered and pushed the trade in a most energetic and businesslike manner, they employ the best of the importing houses as agents, and their representatives visit the market each year. It seems a great pity that Canada, with all her resources in fish, fruit and other natural products, together with her canning organisation and knowledge of the trade, should not have made more headway in this market. Hitherto she has been handicapped by the necessity of transhipping her goods at San Francisco or New York, but the recent inauguration of a direct steamer service should do much to stimulate the trade if only Canadian exporters will send their representatives round the East to study the markets. They have already developed a valuable export trade in the Far East, and it would be well worth the while of those firms who ship to China and Japan to send their travellers on to India for a cold weather tour.

Liquors.—The subjoined table shows the source of the imports of all kinds of liquors into India, both before and since the war :—

Countries of Consignment.	1913-14.	1917-18.	1918-19.	1919-20.
	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).
United Kingdom	940	1,107	1,322	2,083
Australia	1	12	22	35
Germany	158	—	—	—
Holland	10	25	11	39
France	279	250	345	501
Java	20	27	58	85
Japan	2	146	249	344
United States	41	68	101	176
Other Countries	40	31	93	111
Total Imports	1,491	1,666	2,201	3,374

The total imports last year increased to £4,900,000, and it is satisfactory to note that the shipments from the United Kingdom were augmented by well over a million sterling. The principal sub-headings are :—

Ale, Beer and Stout.—Before the war, the United Kingdom supplied 86 per cent., her only competitor being Germany with 11 per cent. During the war, however, the import of light Japanese beers attained such proportions that in 1917-18 and 1918-19 the imports from Japan largely exceeded those from the United Kingdom. The past two years, however, have witnessed a complete reversal of the position and in 1920-21 British imports represented 82 per cent. as to quantity and 80 per cent. as to value of the total, the imports from Japan having been reduced to their 1915-16 level.

Imports of Ale, Beer and Porter.

Countries.	1913–14 (Pre-war year).	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.
	Gals. (1,000).	Gals. (1,000).	Gals. (1,000).	Gals. (1,000).	Gals. (1,000).	Gals. (1,000).
United Kingdom ...	3,978	1,899	829	594	1,253	2,543
Japan	5	600	888	1,077	1,051	229
United States ...	1	16	22	91	121	—
Holland	8	54	60	2	68	105
Australia	—	1	47	27	39	—
Germany	622	8	—	—	—	—
Other countries ...	12	8	12	10	7	199
Total	4,626	2,586	1,858	1,801	2,539	3,076

During the war, the output of Indian breweries increased greatly. In the calendar year 1919 their total production amounted to 6,698,000 gallons, a decrease of 18 per cent. as compared with 1918. It is noteworthy that of the volume of beer consumed in India in 1919-20, approximately one-third was imported and two-thirds produced locally. The heavy increase in the imports last year, however, will probably considerably increase the proportion imported, as there would not appear to have been any great expansion in the domestic production.

Spirits.—The trade in spirits has attained very considerable proportions during the past three years when supplies have once more been obtainable. The present position is as follows :—

Country of origin.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	1 036,883	1,476,542	2,030,176
France	283,397	383,155	770,299
United States	71,461	116,760	124,443
Other Countries	104,161	162,537	233,435
Total Imports	1,495,902	2,138,994	3,158,353

The principal spirits imported in 1919-20 were whisky (£954,523), of which the United Kingdom supplied 96 per cent.; brandy (£413,233), of which France supplied 78 per cent. and the United Kingdom 14 per cent.; spirit present in drugs, medicines or chemicals (£302,299), of which from United Kingdom 67 per cent. and from United States of America 28 per cent.; perfumed spirit (£125,479), of which from United Kingdom 73 per cent., from United States of America 13 per cent. and from France 11 per cent. The United Kingdom supplied 88 per cent. of the gin and Java 73 per cent. of the rum.

Wines.—The imports of wines have steadily increased since the armistice, the figures being :—

1918-19.	1919-20.	1920-21.
£	£	£
240,795	450,641	639,598

The largest share is still held by the United Kingdom with 66 per cent., representing, of course, British re-exports. France comes second with 25 per cent., and Italy third with 5 per cent. Imports from the Cape and from Australia were almost negligible (£7,600 and £5,500 respectively).

Paper and Pasteboard.—The total imports of paper and pasteboard have increased so greatly since the war that they deserve some treatment in detail. The total imports are as follows :—

1918-19.	1919-20.	1920-21.
£	£	£
1,813,779	2,344,572	7,303,427

The last return in 1920-21 was made up as follows :—printing paper £2,848,988, writing paper and envelopes £2,036,087, and other kinds of paper £1,550,772, and paper manufactures £404,839. The recovery made by the United Kingdom during the past two years has been remarkable as the following statistics will show :—

Printing Paper.

Principal Countries of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	57,143	175,703	1,161,230
Sweden	50,566	63,549	395,413
Norway	275,927	197,929	760,867
Japan	50,028	5,120	103,306
United States...	169,400	187,115	164,883
Other countries	1,018	6,175	263,289
Total Imports ...	604,082	635,591	2,848,988

Japan, which, during the war, appeared to be such a formidable competitor has receded to a more humble position, and Norway

and Sweden have resumed their pre-war positions. The competition from the United States is steadily growing and is the most serious element to-day.

Writing Paper and Envelopes.

Principal Countries of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	119,878	236,407	1,112,213
Norway	20,919	58,959	269,408
Japan	70,431	15,362	95,074
United States...	111,854	130,160	289,719
Other Countries	3,675	8,150	269,673
Total Imports ...	326,757	449,038	2,036,087

The most effective competition which will have to be met in the future will be that from the Indian mills. The output from Indian mills at the end of the war was over 30,000 tons per annum, and those which are equipped with modern plant are paying good dividends. There appears to be little question that the future of the paper industry depends largely on bamboo pulp and grasses, of which India and Burma possess almost inexhaustible supplies. At least half a dozen valuable concessions for the manufacture of paper pulp and paper are being developed at the present time and firms interested would do well to read the paper read by Mr. W. Raitt before the Royal Society of Arts in May, 1921.

Chemicals and Chemical Preparations.—The offtake of chemicals and chemical preparations (excluding chemical manures and medicines) has recently averaged just over two million sterling per annum. The total imports are as follows :—

1918-19.	1919-20.	1920-21.
£	£	£
1,661,710	1,610,503	2,661,346

It is most satisfactory to remark that the United Kingdom has regained the pre-eminent position she occupied before the war, as the following table clearly indicates :—

Percentage Share of Principal Countries in the Total Value of Chemicals Imported.

—	1913-14 (pre-war).	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
United Kingdom	74·7	81·6	82·2	69·5	67·2	63·2	75·8
Japan	1·5	2·2	6·5	17·2	20·4	24·3	11·9
Italy	5·2	5·2	4·6	5·6	0·3	1·2	2·0
United States ...	0·8	1·6	2·9	4·5	10·7	5·7	6·6
Germany ...	12·4	5·4	0·7	—	—	—	—
Other Countries	5·9	4·0	3·1	3·2	1·4	5·6	3·7
Total ...	100	100	100	100	100	100	100

Were the detailed figures for 1920-21 available, there is little doubt but that they would show a still further improvement in the British position. It will be observed that Japan has temporarily taken the place formerly occupied by Germany and that the competition from the United States is growing. It may be of interest to examine the principal items separately.

Acids.—Total imports 1919-20, £86,521, 1920-21, £146,157. The principal item is tartaric acid, of which the United Kingdom supplies 70 per cent. and the balance is drawn from Italy and France. Practically all the nitric, sulphuric, and carbolic acid is obtained from Great Britain. The imports of sulphuric acid have tended to decline owing to the increased manufacture in the country from sulphur imported from Sicily and Japan. In my last report I mentioned the proposed erection of a plant by the Burma Mines Co., Ltd., at Jamshedpur for the manufacture of sulphuric acid in connection with their scheme for the production of spelter from their Burma zinc concentrates. It may not be out of place here to state that I understand this scheme is being abandoned after very large sums have been spent on the site.

Bleaching Materials.—These consist almost entirely of bleaching powder, which, during the war, was mainly imported from Japan. The United Kingdom now supplies £105,000 out of a total of £133,000, or roughly 80 per cent., imports from Japan having fallen to 10 per cent. and those from America representing a further 10 per cent.

Soda Compounds.—Nearly 50 per cent. consist of sodium carbonate (soda ash and soda crystals) for bleaching, dyeing, soap, glass and papermaking, etc. The United Kingdom has the virtual monopoly of this trade, thanks to the enterprise of one of the largest British companies who have an admirable sales organisation throughout the market. The imports in 1920-21 were £411,910.

Sulphur.—The imports were £157,532 in 1919-20 and £224,893 in 1920-21. The article is largely used for the manufacture of sulphuric acid and the imports are obtained, 80 per cent. from Japan and 13 per cent. from Italy.

Potassium Compounds.—Total imports in 1919-20, £31,357, 1920-21, £75,074. The United Kingdom supplies approximately 50 per cent., the balance being fairly evenly divided between Japan, Italy and Sweden.

Disinfectants.—India is an important market for disinfectants and the trade is strongly held by the United Kingdom. The small trade in naphthaline disinfectants (£9,000 in 1919-20) is fairly equally divided between the United Kingdom and Japan, but in the ordinary kinds valued at £67,000 the British share was £66,000. The leading Home brands are well-known and actively sold.

Dyeing and Tanning Substances.—Of these by far the most important are dyes obtained from coal tar. The position is as follows :—

Origin.	1919-20.		1920-21.	
	lbs. (1,000).	£	lbs. (1,000).	£
United Kingdom	3,552	534,648	3,467	940,268
Germany	90	8,007	3,653	1,169,670
Belgium	41	15,169	392	133,065
Switzerland	516	275,369	318	150,610
United States	1,918	546,449	2,013	758,552
Other countries	8	4,663	787	213,904
Total Imports ...	6,125	1,384,305	10,630	3,366,069

Of these aniline dyes are the most important—in fact, India is the largest overseas market for anilines and is also the most important outlet for alizarines. The imports of each are as follows :—

Description.	1919-20.		1920-21.	
	lbs. (1,000).	£	lbs. (1,000).	£
Alizarine dyes	2,027	220,740	3,883	732,368
Aniline dyes	4,098	1,163,565	6,738	2,631,033
Others	—	—	9	2,668
Total	6,125	1,384,305	10,630	3,366,069

Alizarine Dyes.—Notwithstanding the considerable increases in the past two years, the imports are still well below the pre-war volume. In 1913-14 6,469,739 lbs. were imported, of which Germany supplied 4,637,450 lbs., the United Kingdom 963,698 lbs. and Belgium (mostly of German origin) 804,243 lbs. In 1919-20 the United Kingdom supplied 1,932,372 lbs. and Germany 89,600 lbs., but last year for the first time since the war German importations have exceeded the British. This, of course, is largely due to the depreciated mark, which enables the German dyes to be placed on the Indian market at exceedingly low rupee prices. The leading British works have recently been extended, they have an active selling organisation in India and they are confident that—excluding wholly fortuitous circumstances such as the low German exchange—they can meet German competition in respect of cost of production and selling organisation. It will be interesting to follow the course of events during the next few years. Competition will be keener than ever before, but it is hoped that the British manufacturers will manage to retain a large share of the trade.

Aniline Dyes.—The progress made by the leading British makers is noteworthy and they are rapidly strengthening their position, but the entry of German dyes in large quantities during the past twelve months has created a very difficult situation. Although this competition could be met in normal circumstances, the depreciated value of the mark enables our rivals to make extraordinary low rupee quotations. The German producers are re-appointing agents throughout India and are endeavouring to revive their pre-war organisation with the one qualification that they are not permitted by legislation to reside in the country for some years, and so are obliged to leave their interests in the hands of Indians and others. Meanwhile the largest British company has established a main depôt with laboratories, re-packing godowns, etc., at Bombay, and employs its own staff of technical and commercial men. Sub-depôts have already been opened or are about to be opened in the leading consuming centres and every endeavour is being made to cater for the demands both of the mill and bazaar trades. Other British manufacturers are employing the services of merchant agents and there appears to be no doubt that a determined fight will be made for the trade. Competition is being encountered not only from Germany but also from the United States and Switzerland. The American houses are particularly active and usually distribute their goods through Indian selling agents. It is somewhat strange that the average value of American dyes imported should be higher than the British—Rs. 3·76 per lb. as compared with Rs. 2·71 per lb. Hopes had been entertained that India might have followed the example of the United Kingdom in prohibiting the import of dyes except under licence, but Indian consumers are anxious to have the widest possible market for their dyestuffs, which they regard as a raw material of the growing textile industries and moreover they are not generally disposed to interfere with imports from Germany in view of the fact that Germany is normally one of the largest consumers of India's exports.

Soap.—The soap trade, thanks to the enterprise of the two largest soap-producing companies in the United Kingdom, has hitherto always been almost exclusively in British hands and it is satisfactory to note that the trade is not only increasing, but that British imports represent, each year, an even greater proportion of the total.

Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	612,968	1,082,351	1,309,847
Other countries	54,456	139,962	99,617
Total Imports ...	667,424	1,222,313	1,409,464

Imports are classified by the Indian Customs Authorities under three main headings—household and laundry soap, toilet soap and other sorts. The quantities and values of each imported in 1918-19 and 1919-20 were as follows :—

Description.	1918–19.		1919–20.	
	Cwts.	£	Cwts.	£
Household and laundry soap in bars or tablet.	162,284	400,753	260,004	742,274
Toilet soap	31,090	243,401	38,994	439,994
Other sorts	5,970	23,270	9,634	40,045
Total	199,344	667,424	308,632	1,222,313

So far as the first item is concerned, there is practically no competition. In toilet soaps, however, imports from the United States have steadily increased. In 1918/19 they represented 12 per cent. and in 1919-20 18 per cent. They consisted for the most part of good quality tablet soaps for the European and the best Indian demand. On the other hand, the imports from Japan comprised cheap soaps for the bazaar trade. Japanese shipments have steadily declined of recent years and in 1919-20 only amounted to 3 per cent. of the total. The United Kingdom supplied 90 per cent. and the United States 5 per cent. of the unclassified varieties. In my last report, I dealt at some length with the competition of Indian-made soaps for household use. The remarks then made still hold good, and I believe that this is the only serious competition which we may meet in the future. Should this competition ever become really serious, owing to protective duties or other causes, then the only way to counter it would be for British manufacturers to erect works in the country.

Paints and Painters' Materials.

Paints and Colours.—There is a considerable and growing trade in paints and colours. The position is as follows :—

Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	258,736	735,260	1,263,639
Japan	327,850	79,072	23,084
United States...	135,637	87,399	139,491
Other countries.	23,676	65,096	98,485
Total Imports ...	745,899	966,827	1,524,699

It is gratifying to observe that the United Kingdom has regained her position in the trade. American competition is becoming insistent, particularly in white lead and in the high grade paints such as those manufactured by the Paraffin Paint Co. of San Francisco and sold under the style of "Pabco." Japanese

competition, however, is likely to decline and was merely a war growth. The heading "Other Countries" mainly covers imports from Hong Kong.

Painters' Materials.—These comprise :—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Genuine Turpentine ...	21,490	42,345	60,344
Reduced Turpentine ...		9,758	8,305
Varnish	78,040	228,565	307,005
Other kinds		59,641	51,812
Total	99,530	340,309	427,466

In 1919-20 the United Kingdom supplied 71 per cent. of the genuine turpentine, 87 per cent. of the reduced turpentine and 87 per cent. of all varnishes. The only serious competition was that from the United States, which furnished 26 per cent. of the genuine turpentine and 12 per cent. of the varnish. The most serious future competition is likely to be that of Indian paint and varnish works. Turpentine is already being made in the country in increasing quantities. Indian products include all that is necessary for the vehicles of ordinary paints while mineral resources and established manufactures provide all the pigments necessary for some few paints and a large proportion of the pigments in other cases. The few paint works in operation in India are successful concerns.

Drugs and Medicines (excluding Chemicals and Narcotics).—The trade is a valuable one and has recently increased considerably as will be seen from the following table :—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Camphor	115,068	246,503	267,749
Cassia Lignea	84,806	165,186	128,639
Chinchona bark	96	147	252
Morphia and preparations of Opium and Morphia.	—	4,196	6,950
Proprietary and Patent Medicines	163,376	304,880	281,177
Quinine Salts	155,088	233,227	354,186
Other sorts	459,528	870,825	1,073,876
Total	977,962	1,824,964	2,112,829

Seventy-two per cent. of the camphor comes from Japan (or rather Formosa). Severe competition is met with in the trade in quinine salts (of which quinine sulphate or bisulphate is the most important). Java supplies 45 per cent., the United Kingdom 40 per cent., America 6 per cent. and Japan 6 per cent. In

proprietary and patent medicines, competition is becoming very keen and both America and Japan have made great progress during the war. The United Kingdom still provides 56 per cent. of the imports, but the American share is now 24 per cent., that of Japan 8 per cent. and France 7 per cent. The general drug trade is also becoming much more competitive. The share of the United Kingdom in " drugs, other sorts," is 55 per cent., America 16 per cent., Japan 7 per cent. and France 3 per cent. The balance is made up by the import of native drugs from sources such as the Straits, Hong Kong and Portuguese East Africa. In high-grade preparations the United States is becoming a keen rival, while Japan is strengthening her hold on the cheaper drugs and patent medicines. Of the total imports in 1919-20, the United Kingdom supplied 42 per cent., the United States 12 per cent., Japan 12 per cent., Java 6 per cent., France 3 per cent. The remainder was obtained from Hong Kong, Persian Gulf and other Eastern sources and was non-competitive.

Apparel (excluding Hosiery, Boots and Shoes).—The subjoined table shows the total imports during the past three years, and the articles of which they were made up :—

Articles.	1918-19.	1919-20.	1920-21.
	£	£	£
Apparel (including drapery, uniforms and accoutrements).	780,828	1,194,799	1,824,691
Gold and Silver Thread	212,402	169,633	725,379
Hats, Caps, Bonnets and Hatters' Ware	101,245	124,356	428,378
Lametta	71,923	29,745	118,218
Second-hand Clothing	50,481	58,983	147,997
Waterproofed Clothing	6,294	10,735	18,184
Total Imports	1,223,173	1,588,251	3,262,847

The following table shows the provenance of the imports :—

Origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	577,845	741,231	1,605,929
France...	284,284	192,762	774,204
Italy	26,262	25,464	139,573
Japan	211,421	442,477	308,695
Other Countries	123,361	186,317	434,446
Total	1,223,173	1,588,251	3,262,847

As regards articles of apparel, drapery, &c., the United Kingdom has practically a monopoly of the better grades, but in the cheap articles of ready-made clothing for the bazaar, Japan has attained a very strong position. In 1919-20, the United Kingdom supplied 50 per cent., Japan 35 per cent., and the United States

of America and China each 2½ per cent. A considerable proportion of the goods supplied by Japan are of such low quality that they are really non-competitive.

The supply of gold and silver thread and lametta is a monopoly of France. Prior to the war, Germany supplied a certain quantity, but France now has the entire trade. The thread is used by Indian weavers of brocades, saris, etc., and for the gold and silver borders to such garments. The centres of the trades are Benares, Madura and Surat and the imports are shipped via Bombay with a much lesser proportion via Madras.

In hats, caps, bonnets and hatters' ware, the United Kingdom now supplies 60 per cent. of the trade, Italy 18 per cent. and Japan 16 per cent. British makers still provide the supplies of high-grade and medium helmets, hats and caps, and Italian and Japanese competition is confined to the cheap articles for the bazaar trade.

The United Kingdom supplies most of the second-hand and waterproofed clothing, although the trade is not large. American shipments of second-hand clothing have increased of late years.

Hosiery.

Cotton Hosiery.—The Indian market for hosiery is very large and is growing rapidly as the following figures show :—

Principal Countries of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	61,040	67,670	178,334
Japan	490,617	1,223,903	1,393,074
United States...	7,312	65,074	218,936
Other Countries	22,866	93,822	118,468
Total Imports ...	581,835	1,450,469	1,908,812

It would be hopeless to attempt to compete with Japan in the greater portion of this trade, which consists of light cheap singlets, socks, etc., for the bazaars. It seems a pity, however, that British makers have not made a greater bid for the better qualities, which were formerly imported from Germany, but which are now largely drawn from America. There would appear to be no obvious reason why manufacturers in the Midlands should not compete with their rivals in the United States.

Woollen Hosiery.—This is a much smaller trade, but one which is expanding. The total imports were :—

1918-19.	1919-20.	1920-21.
£	£	£
93,882	62,740	320,490

Great Britain, in 1919-20, supplied 66 per cent., Japan 23 per cent. and the United States 7 per cent. Large quantities of good woollen sweaters, vests, socks, etc., are now being manufactured in the country by the Cawnpore Woollen Mills Co., Ltd., and other concerns. This development is bound to affect the import trade in course of time.

Haberdashery and Millinery.—The principal headings are :—

Article.	1918–19.	1919–20.	1920–21.
	£	£	£
Lace and Embroidery ...	710,577	968,524	830,942
Towels not in the piece ...			132,445
Other sorts			2,055,488
Total Imports ...	710,577	968,524	3,018,875

The following table gives the source of the imports :—

Principal Countries of Consignment.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	427,981	435,283	1,278,145
France	49,631	31,887	151,549
Switzerland	35,367	157,031	844,862
Italy	42 533	42,274	174,618
Japan	124,388	217,251	298,230
Other Countries	30,677	84,798	271,471
Total	710,577	968,524	3,018,875

The United Kingdom retains the trade in the higher grade articles largely owing to the fact that the large retail stores in India are mostly British-owned and purchase their stocks through their London offices or other firms of warehousemen in the United Kingdom. The Swiss trade is mainly in lace and embroidery, while Japan supplies the cheap article to meet the bazaar demand.

Boots and Shoes.—The total imports were as follows :—

Description.	1918–19.	1919–20.	1920–21.
Boots and Shoes—	£	£	£
Of Leather	170,660	319,327	933,097
Of other materials... ...	43,037	58,482	125,226
Total Imports ...	213,697	377,809	1,058,323

The origin of the imports were as follows :—

Origin of Imports.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	157,985	149,059	569,600
Japan	9,641	6,512	4,700
United States	39,749	212,522	432,200
Total Imports ...	213,697	377,809	1,058,323

The following table giving the quantities is also interesting :—

Origin of Imports.	1918-19.	1919-20.	1920-21.
	Pairs.	Pairs.	Pairs.
United Kingdom	437,166	333,440	710,623
Japan	90,760	47,134	51,020
United States...	83,378	259,488	259,019
Total Imports ...	638,488	668,592	1,071,029

Eighty-five per cent. of the imports are of leather boots and shoes, mostly for men's wear. Before the war, the British share was as much as 97 per cent., the only competition being experienced from Austria-Hungary and Germany. During the war, however, American boots and shoes became established and they now have a very strong position in the better quality trade. The average value per pair of shoes imported from the United Kingdom in 1920/21 was 16*s*. while in the case of the United States it was 33*s*. 6*d*. This shows that British makers retain the bazaar business but are losing their hold on the higher grade trade for European and Indian use. In the large British Stores in India to-day, American boots and shoes are usually seen, whereas—before the war—the goods displayed were all British. In view of the all-round excellence of the high grade British boot, this state of affairs should be investigated and remedied. I would advise Leicester and Northampton manufacturers to interview the London Houses of the leading retail stores in India and endeavour to put matters right. The names and addresses may be obtained from the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1.

In my opinion, the present situation is the result of lack of representation. The leading makers of high grade footwear are rather apt to rely on orders being placed with them on the strength of their reputation, and consequently they do not take sufficient trouble either to canvass the large London buyers for India or to appoint agents in the country. As a case in point, one of the largest and best-known British makers has appointed a retail house in Calcutta as its agents for all India. When interviewed by myself at their own works last year, they expressed themselves as being quite satisfied, although I know that efficient representation throughout India should increase their trade fivefold. They were not represented at all in Bombay, which imports three times as much as Calcutta (expressed in value, as we are here dealing with high-grade goods). The principal markets in 1920-21 were as follows :—Bombay 347,000 pairs, Rangoon 339,000 pairs, Calcutta 199,000 pairs, Karachi 158,000 pairs and Madras 28,000.

The trade in boots and shoes made of other materials than leather is much less important. In 1919-20 the imports were 283,476 pairs valued at £58,482. Of these 195,540 pairs were obtained from the United Kingdom, 40,576 pairs from Japan and

33,076 pairs from the United States of America. Here again the average value per pair imported from the United Kingdom was approximately 4*s*. as compared with 8*s*. in the case of the American supplies. This American competition in the better qualities of footwear calls for careful investigation.

The following interesting note by Sir Henry Ledgard, Honorary Adviser on boot production to the Government of India, has recently been published in the Journal of Indian Industries and Labour and gives the principal developments in India :—

" *United Provinces.*

" This province has been the chief footwear-producing area, and, notably, at two factories in it great developments have been undertaken. At one a modern plant to manufacture yearly 450,000 to 600,000 pairs of the latest type of army boot has been installed and is now satisfactorily working; at another factory a complete modern plant of machinery has been installed to manufacture yearly 600,000 pairs of boots and shoes for the civilian trade. At this latter factory a new and complete plant of machinery for the production of chrome leathers for boot and shoe uppers has also been provided. A third factory, at present only a small one, is now producing army boots at the rate of about 30,000 pairs yearly, but so far has not a complete plant of machinery, though the erection and installation of one to make 300,000 pairs yearly of army and civilian boots and shoes is contemplated. Negotiations are proceeding for the formation of two companies in other towns to start boot factories for the making of civilian footwear.

Bengal.

" Substantial progress has been made. A factory has been erected and machinery installed to make yearly 300,000 pairs of civilian boots and shoes and 75,000 pairs of army boots. This is a very fine and well-organised factory, and work is now commencing in it. Buildings are in course of erection and machinery has been ordered for the tanning and dressing of all the leathers to be used in the making of footwear. A staff of five Europeans has arrived. A similar factory of the same size and capacity of outturn, designed to produce its own finished leather and the same number of pairs of boots as the factory last mentioned, is nearly completed. The European staff of overseers has arrived. A third concern, but one smaller than those mentioned above, is making good progress towards completion and should be working in two or three months. There are one or two other concerns, on behalf of which small orders have been placed for machinery, which it is hoped will develop into large undertakings in due course.

Bombay.

" A complete plant of machinery has been ordered by a company to produce yearly 150,000 pairs of civilian boots

and shoes. Another company has ordered a complete plant of machinery to produce annually 75,000 pairs of ladies' brocade and other fancy shoes.

Madras.

" A company which has existed for many years has supplemented its boot-making plant with the latest machinery and, it is understood, intends remodelling its entire plant.

" In other parts of India concerns and firms are negotiating for the purchase of boot and shoe machinery, but, owing to the delay in obtaining the machinery and iron work for their buildings, no action has yet been taken. It is also probable that they are awaiting further assurance of success after they have seen the practical results of the concerns which have recently started or will shortly be starting.

" It is believed that as soon as those interested in the leather trade are assured that good boots and shoes of civilian types can be made profitably in India from Indian leather with Indian labour and with modern machinery, a considerable development in machine boot-making in India will result. The representatives in India of the British United Shoe Machinery Company, Limited, are confident that boots equal to those at present imported from England can and will be manufactured in India."

Leather.—The import statistics may be summarised as follows :—

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Hides, tanned or dressed ...	15,739	77,253	117,291
Skins, tanned or dressed ...	108,163	53,121	87,752
Unwrought Leather	40,622	49,536	124,560
Leather Cloth	—	16,052	63,257
Artificial Leather	—	5,611	28,079
Total Imports ...	164,524	201,573	420,939

In 1919-20 66 per cent. of the hides and skins were obtained from the United Kingdom, 23 per cent. from Ceylon and 10 per cent. from the United States. Of tanned and dressed skins, the United Kingdom shipped 43 per cent., America 26 per cent. and Straits Settlements 23 per cent. Unwrought leather was obtained from the United Kingdom (64 per cent.), United States (24 per cent.), and small quantities from Australia and the Straits Settlements. Imports of leather cloth were divided between the United Kingdom (82 per cent.) and the United States (18 per cent.). Artificial leather is, as yet, not an important item. The United States has 62 per cent. of the trade, Japan 26 per cent. and the United Kingdom 10 per cent.

Leather Manufactures (excluding boots and shoes and belting for machinery).—These comprise the following main items :—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Bags and Trunks	10,338	35,520	74,718
Pickers	—	56,857	122,865
Picking Bands and Straps ...	—	41,952	185,911
Roller Skins	—	56,523	155,951
Saddlery and Harness ...	15,131	26,544	70,571
Other sorts	73,704	122,333	255,253
Total Imports ...	99,173	340,729	865,269

It will be observed that the trade in leather manufactures more than doubled in the last year under review. The sources of the imports for that year are not yet available, but inasmuch as the British share of the total imports nearly trebled in volume, it is only reasonable to suppose that the United Kingdom increased her share of the supplies under each heading.

In 1919-20 the trade in bags and trunks was the only one where the United Kingdom did not predominate. Japan supplied no less than 80 per cent. and the United Kingdom just under 20 per cent. Pickers, picking bands and straps and roller skins are all articles used in either the jute or cotton mills, and here Great Britain has practically a monopoly of the import trade, which she is likely to retain. As was stated in my last report, both pickers and picking bands are now being made in India, and in future this may have the effect of reducing the quantities imported.

The following table shows the total of leather and leather goods and the shares of the various countries of supply :—

Principal Countries of Consignment.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	181,023	365,933	1,069,209
Ceylon	18,716	19,092	16,441
Straits Settlements	975	15,249	241
Japan	22,237	54,432	42,445
United States of America ...	30,197	66,619	105,538
Total Imports ...	263,697	537,302	1,286,210

The above figures clearly show the wonderful recovery of British trade when relieved from the handicaps of war and with a high exchange in favour of all imports.

Belting for Machinery.—The imports of belting into India are on a large scale and are likely to increase. The imports of the various types of belting were as follows :—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Cotton Belting	(Included in other kinds)	140,349	372,396
Leather Belting	220,827	211,282	640,445
Other kinds (including Coir)	336,721	189,175	448,121
Total Imports ...	557,548	540,806	1,460,962

The following table shows the source of the total imports :—

Country of Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
From the United Kingdom...	515,505	475,400	1,310,500
„ Holland	627	270	15,700
„ Turkey...	—	—	12,800
„ the United States ...	32,761	62,368	117,100
Total Imports ...	557,548	540,806	1,460,962

British makers are well represented and have the bulk of the trade in leather, balata and other beltings. American competition, however, is becoming much keener, principally in leather belting, and should be watched. Bombay is the principal market for leather belting as it is most extensively used in the cotton mills. On the other hand, Calcutta leads the way in balata, camel hair and other beltings. The total imports are about equally divided between the two ports with Rangoon a fairly close third.

Books and Printed Matter.—This has always been an almost exclusively British trade. The imports were :—

——	1917–18.	1918–19.	1919–20.	1920–21.
	£	£	£	£
Total Imports	317,141	338,682	423,536	659,999
From the United Kingdom ...	303,507	323,628	390,064	Not yet available.
„ the U.S.A.	9,361	12,136	26,248	

The British publishing houses are strongly established in India and this trade should increase year by year as literacy extends in India. American supplies, although not as yet large, show a progressive increase. It is probable that they mainly represent supplies for American missionary activities in India.

Stationery (excluding Paper).—The large imports of stationery for account of Government which fall under the heading of Government Stores have already been dealt with on page 112. The following are the figures of the imports on private account :—

Principal Countries of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	311,487	469,634	1,266,997
Japan	91,810	133,888	142,362
United States...	50,142	159,721	277,233
Total Imports ...	466,447	782,541	1,821,455

Serious competition, both from Japan and America, will have to be faced in future, and there will also be a certain amount of Indian competition in such articles as pencils. Inasmuch as most of the European commercial houses purchase their stationery requirements through their head offices in London and elsewhere, it would appear that, apart from the wants of the slightly increasing number of American firms in India, the greater proportion of the American trade must be for the bazaar trade. We know that the whole of the Japanese imports are for the bazaar demand.

Tobacco.—The imports of all forms of tobacco show a most satisfactory increase. The statistics are as follows :—

Description.	1918-19.	1919-20.	1920-21.
	Lbs.	Lbs.	Lbs.
Unmanufactured Tobacco ...	499,891	880,155	712,216
Cigars	40,176	80,298	69,016
Cigarettes	4,094,342	4,159,544	6,205,562
Total Imports ...	5,363,266	5,788,622	7,609,683

Unmanufactured tobacco is drawn principally from Persia, Egypt and the Dutch Indies (*via* Singapore). The imports from Persia have increased until in 1919-20 they represented 83 per cent. of the whole.

Cigars in 1919-20 were mainly obtained from the Philippine Islands (£22,330), Holland (£5,024), and the United Kingdom (£2,889). This is really a luxury trade, and is very largely for the European demand. The average European or Indian cigar smoker in India smokes either Indian or Burma cheroots. Cigarettes account for the greater portion of the imports and the following table will be interesting as showing their provenance :—

Principal Countries of Consignment.	1919-20.		1920-21.	
	Lbs.	£	Lbs.	£
United Kingdom	2,960,196	1,211,855	2,864,032	1,349,854
Aden and Dependencies ...	28,193	11,465	34,683	15,409
Straits Settlements ...	10,879	3,899	1,359	680
Egypt	23,176	16,159	19,089	17,357
United States	1,105,795	430,288	2,940,445	1,057,571
Total Imports ...	4,159,544	1,686,348	6,205,562	2,563,002

The total *number* of cigarettes imported was estimated approximately in 1919-20 at 1,591 millions, as against 1,544 millions in the previous year and 653 millions, the pre-war average.

It will be observed that the weight of cigarettes imported from the United Kingdom in 1920-21 was 96,164 lbs. less than in 1919-20 and the value only increased by £138,000, whereas in the case of the United States the weight increased by 1,834,650 lbs. and the value by £627,283. The reason for this is that, owing to the enormous accumulation of orders in the United Kingdom, British factories were not able to turn out all India's requirements and there was a temporary transfer of manufacture to the United States. It is to be hoped that the British position will be re-established next year.

Rubber Manufactures.—The trade is an important one and is rapidly expanding as will be seen from the subjoined table :—

Article.	1918-19.	1919-20.	1920-21
	£	£	£
Tyres for Motor Cars and Motor Cycles.	385,204	942,249	1,406,017
Tubes for Motor Tyres ...	73,763	201,802	289,909
Other Manufactures (except apparel and boots and shoes).	365,606	521,915	824,307
Total Imports ...	824,573	1,665,966	2,520,233

The large and growing demand for motor cars and motor cycles is reflected in the import statistics of tyres and tubes. The following are the principal countries of origin :—

Countries.	1913-14.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).	£ (1,000).
Rubber Tyres for Motor Cars and Motor Cycles—						
United Kingdom	54	143	186	228	348	349
United States ...	—	35	72	76	303	373
France	39	26	52	55	143	148
Italy	3	57	81	15	98	436
Japan	—	37	—	1	1	—
Germany ...	16	—	—	—	—	—
Other Countries	2	10	6	10	49	100
Total... ...	114	308	397	385	942	1,406
Rubber Tubes for Motor Tyres—						
United Kingdom	10	30	45	42	85	Details not available.
France	7	26	35	13	61	
Japan	—	—	—	—	—	
Germany ...	5	—	—	—	—	
Other Countries	—	8	17	19	56	
Total... ...	22	64	97	74	202	290

These figures are most disappointing, showing, as they clearly do, that while the trade in British tyres is relatively stationary, American, Italian and French imports are increasing rapidly, and the United Kingdom has now fallen to third place in the list of supplying countries. The following table of percentages* of tyre imports makes the position clearer still :—

Country of Origin.	1913-14.	1918-19.	1919-20.	1920-21.
	Percentage.	Percentage.	Percentage.	Percentage.
United Kingdom	47	59	37	24·8
United States	—	20	32	26·5
Italy	2·6	4	10	31·0
France	34·0	14	15	10·0

The situation is just as unsatisfactory in rubber tubes for motor tyres. Before the war, the United Kingdom had 45 per cent. of the trade, France 31 per cent. and Germany 22 per cent. In 1919-20, the British share had fallen to 42 per cent. while that of France had advanced to 30 per cent. and the United States had risen from zero to 23 per cent. The set-back to British trade in this item of rubber tyres is brought into greater prominence when contrasted with the wonderful recovery under almost every

* These percentages refer to "tyres" only during 1920-21.

other heading of import. It is due principally to the increasing hold of the United States over the trade in motor cars; to improved American selling organisation—all the leading tyre manufacturers being now actively represented by merchant agents in India—and to some extent to an improved direct shipping service from both the Atlantic and Pacific coasts. A few years ago, American imports of tyres and tubes were almost entirely drawn from the Atlantic coast, but the introduction of a direct steamer service from San Francisco to Calcutta has equalised matters and the shipments are now about equally divided.

It is to be hoped that British Manufacturers will make a determined effort to regain their position in this trade during the next few years, and they would do well to examine their selling organisations, and to see whether they could not be improved and extended. One of the largest makers has a widespread organisation with branches in the principal centres. The others are mainly represented by mercantile agents. In these latter cases it would be advisable to maintain one or two resident representatives in the country to push sales and assist the agents with their technical advice and expert knowledge.

The following statement shows the number of the various types of motor vehicles registered in the different provinces of British India up to March 31st, 1921 :—

—	Motor Cars.	Motor Cycles, including Motor Scooters and Auto-wheels.	Heavy Motor vehicles (Lorries, 'Buses, &c.).	Total.
	No.	No.	No.	No.
Bombay Presidency	10,288	2,458	544	13,290
Bengal Presidency	7,482	1,790	495	9,767
Central Provinces (Nagpur) ...	735	420	15	1,170
Karachi (Sind)	547	276	·76	899
Madras City	1,026	193	33	1,252
Madras Presidency (except Madras City).	1,124	853	298	2,275
Delhi	412	103	. 88	603
Burma	3,240	1,533	245	5,018
Ajmere-Merwara	41	31	—	72
North-West Frontier Province (Peshawar)	264	196	21	481
Bihar and Orissa*	1,311	441	77	1,829
Punjab (Lahore)	2,229	1,355	· 391	3,975
Assam	560	182	30	772
United Provinces	2,675	1,568	347	4,590
Grand Total	31,934	11,399	2,660	45,993

* Figures relate to motor vehicles registered during the financial year 1920–21.

In the unclassified miscellaneous manufactures of rubber, the United Kingdom is also losing ground to the United States, France and Japan, and here again a special effort is needed to regain the trade. Mention should also be made of the rubber

manufacturing industry which has been started during the last few years in Colombo by the Ceylon Rubber Mills Co., Ltd. The total imports of rubber manufactures from Ceylon have increased from £2,635 in 1915-16 to £28,048 in 1919-20. The trade is still on a small scale, but there are great potentialities in the future.

Instruments, Apparatus, Appliances, etc.—This is one of the largest headings and last year attained a total value of £5,811,148 of which £4,183,864 consisted of electrical instruments and appliances. The classification is a very wide one, and it will be best to examine each of the main items in turn. The totals for the past three years are as follows:—

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Electrical Instruments, etc.:—			
Fans and Parts	179,028	214,349	399,030
Wires and Cables	241,548	448,536	1,215,879
Telegraph and Telephone Instruments and Apparatus.	—	63,259	49,566
Lamps and Parts	172,836	104,856	242,488
Batteries, Primary	—	31,167	27,673
Accumulators	—	—	152,908
Lighting Accessories and Fittings.	—	—	314,211
Meters	—	34,396	84,091
Switchboards (other than telegraph and telephone).	—	60,917	54,529
Total of Electrical Instruments, etc.	954,845	1,549,589	4,183,864
Musical Instruments	94,342	109,481	372,482
Optical	36,967	74,235	171,186
Photographic	156,955	114,690	295,048
Scientific and Philosophical ...	117,370	209,466	439,044
Surgical	67,603	127,623	241,017
Other kinds	17,249	34,360	108,507
Total Imports	1,445,331	2,219,444	5,811,148

Electrical Apparatus and Appliances.—The following table shows the wonderful advance made by the British firms, who have re-won almost all the position lost during the war:—

Principal Countries of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	258,201	800,132	2,888,257
Holland	89,777	21,473	73,328
Italy	79,449	59,814	75,622
Japan	277,884	81,253	126,582
United States...	237,646	562,875	950,283
Total Imports ...	954,845	1,549,589	4,183,864

In the five years preceding the war, the United Kingdom supplied 82 per cent., the United States 6 per cent. and Japan 4 per cent. Last year the respective shares were, the United Kingdom 69 per cent., the United States 20 per cent., Japan 3 per cent., Holland and Italy each about 2 per cent.

We will now deal with the position of each item in detail :—

Fans and parts thereof.—During the war, the large trade in ceiling and desk fans was practically shared by the United States and Italy with the United Kingdom a bad third. This position is now largely reversed, and although the Americans still head the list, the margin over the British imports is reduced to very little. The figures are :—

	1919-20.	1920-21.
	£	£
From United Kingdom	25,151	148,262
,, United States	134,787	183,169
,, Italy	53,929	61,336
Total imports	214,349	399,029

Electric Wires and Cables.—In electric wires and cables the British lead is still further established, although American and Japanese shipments, notably of bare copper wire, have increased enormously. The following is the position :—

Principal Countries of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	33,236	346,621	991,620
United States...	20,010	54,816	148,566
Japan	182,976	44,828	64,723
Total Imports ...	241,548	448,536	1,215,879

The most important item is rubber insulated cable, of which the United Kingdom supplied 90 per cent., the United States 7 per cent. and Japan 2 per cent. As regards insulations other than rubber, 96 per cent. came from the United Kingdom and 2½ per cent. from Japan. The United Kingdom supplied virtually the whole of the telegraph and telephone wires and cables (£28,083 out of £31,456) with trifling quantities from the United States and Japan. It is in bare electrolytic copper wire that both America and Japan have the strongest position. The figures are as follows :—

	1919-20.	1920-21.
	£	£
From United Kingdom	18,088	63,858
,, United States	7,889	105,873
,, Japan	19,272	40,937
Total	45,250	217,921

Both the United States and Japan produce copper in large quantities and it is only to be expected that their shipments under this head would be considerable. Apart from copper wire, Japanese imports of cables are negligible. The strong British position in the cable trade is almost entirely due to the excellent organisation and activity of the Indian Branches of the leading British cable makers.

Lamps and parts thereof.—The most striking feature during the war was the phenomenal increase in the imports of Dutch lamps (mostly manufactured by Messrs. Philips). During the last few years, however, these imports have been largely replaced by British lamps and the United Kingdom now supplies 55 per cent. of the total trade, Holland 28 per cent., the United States 5 per cent. and Japan 4 per cent. The principal imports are as follows :—

Electric Glow Lamps :—

	1919-20.	1920-21.
	£	£
From United Kingdom	7,492	104,484
,, Holland	1,698	46,577
,, United States of America...	4,317	8,314
Total imports	15,063	169,026

Electric Lamps, other sorts :—

	1919-20.	1920-21.
	£	£
From United Kingdom	41,607	35,103
,, Holland	17,645	22,527
,, Japan	10,241	8,535
,, United States of America...	19,101	5,210

Accumulators.—This also is largely a British trade. Out of a total of £152,908, the United Kingdom supplied £141,525 and the United States £11,229.

Batteries (Primary).—For the last few years America has enjoyed the bulk of this trade, but in 1920-21 British supplies almost doubled and there was a considerable decline in American imports. The total trade amounts to £27,673, of which £10,593 from the United Kingdom and £16,805 from United States of America.

Telegraph and Telephone Instruments.—The total trade is worth £49,566. The United Kingdom supplies £31,541 and the United States £8,380. American imports show a marked falling off during the past year.

Lighting Accessories and Fittings (including switches).—This is a valuable trade, which—during the war—was largely in Japanese and American hands. In the past two years, however, British makers have regained their position and the latest figures are :—£277,255 from United Kingdom, £23,026 from the United States and £3,146 from Japan, out of a total trade of £314,211.

Meters.—Here again, British manufacturers have been most successful in improving their position. The imports were divided as follows :—

	1919-20.	1920-21.
	£	£
From United Kingdom	24,761	71,191
,, United States of America...	1,130	4,974
,, other countries	8,505	7,926
Total imports	34,396	84,091

Electro-medical Apparatus (including X-ray apparatus).—The trade is, as yet, comparatively undeveloped, but will probably increase. The total imports in 1920-21 were only valued at £6,533, of which the United Kingdom supplied £4,970 and the United States £1,448.

Switch boards (other than telegraph and telephone).—Great Britain has the lead, but severe competition is experienced from the United States. The figures are :—United Kingdom £35,636, United States £18,810, total £54,529.

Electrical Apparatus (not otherwise enumerated).—This is a very wide classification but it is satisfactory to note that the British lead has been increased. The following table shows the position :—

Country of origin.	1919-20.	1920-21.
	£	£
United Kingdom	292,365	1,025,536
United States	270,389	513,369
Japan	20,123	45,355
Italy	3,056	13,421
Total	592,109	1,618,187

Before closing this section dealing with electrical apparatus it may not be considered presumptuous to pay a tribute to the branches and agents in India of the leading British makers to whose sound organisation and active salesmanship a very great deal of the splendid recovery made is due. The electrical trade, both as regards machinery and apparatus, fittings, &c., may be regarded as a model from the point of view of representation. Almost all the leading makers have their own branches in India staffed with both technical and commercial men, and where this is not the case, the agency is entrusted to a local merchant house, who can provide a similar organisation. The figures and particulars given above are sufficient proof of the value and efficiency of this system.

Musical Instruments. It is unfortunate that the same detailed particulars for 1920-21, which are available for electrical instruments cannot be readily obtained in regard to the musical instrument trade. The following particulars are therefore abstracted from the returns for the year ended March 31st, 1920. One may fairly confidently assume, however, that inasmuch as the total

imports trebled in value last year, British suppliers probably improved their relative position. The total imports were as follows :—

1918-19.	1919-20.	1920-21.
£	£	£
94,342	109,481	372,482

The most important item is that of talking machines and accessories. Of these a total of £54,339 were imported,* £35,981 from the United States of America and £13,081 from the United Kingdom. The trade in pianos and piano players amounted to £15,369 of which Great Britain supplied £8,556 and the United States £4,644. I understand that German pianos are being imported again and, in view of their general excellence and special construction to suit the climate, it would appear to be only a question of time before they regain their pre-war position. British makers have had a great opportunity, but so far one cannot see much improvement in their position. All other kinds of musical instruments except organs and harmoniums only amounted to £38,486 of which £18,624 from the United Kingdom and £10,802 from the United States of America.

Scientific Instruments and Allied Trades.

Optical Instruments.—The trade amounted in value to £36,967 in 1918-19, £74,235 in 1919-20 and £171,186 in 1920-21. The major share was held by the United States with £38,501,* followed by the United Kingdom with £11,171 and Japan £18,165. American instruments compete generally with even the high grade British article. The imports from Japan are, for the greater part, cheap spectacles, &c., for the bazaar trade.

Photographic Appliances, &c.—The total imports were, in 1918-19, £156,955, 1919-20 £114,690 and 1920-21 £295,048. This trade has, for years, been predominantly British. Before the war the United Kingdom supplied 92 per cent. and Germany 4 per cent. In 1919-20 the British share was 68 per cent. and that of the United States 28 per cent. It is to be expected that British makers regained their position last year. They are well represented by branches and agents, and Messrs. Kodak, Ltd., opened a branch of their London house in Bombay last year.

Scientific and Philosophical Instruments.—This trade more than doubled during the past year—£209,466 to £439,044. Great Britain supplied about 90 per cent. of the imports before the war, but American competition has increased rapidly, and in 1919-20 the British share was 57 per cent. and the American 33 per cent. Japan sent 4 per cent. and France a trifling amount.

Surgical Instruments.—After a considerable reduction in volume during the war, total imports have advanced from £67,603 in 1918-19 to £127,623 and £241,017 in 1919-20 and 1920-21 respectively. Before the war 77 per cent. of the supplies were obtained from the United Kingdom and 9 per cent. each from Germany and America. In 1919-20 Great Britain shipped 56 per cent., the United States 35 per cent. and Japan 7 per cent. British makers are well-established and represented in the

* During 1919-20.

country, and although American competition will be difficult to dislodge, it is probable that the British share will be found to have considerably increased in the statistics for the last year.

It should be observed that the above statements apply to instruments imported on private account only. There is also a very large import as Government stores for the use of the Public Works, Education, Survey and other Departments, and the Indian Medical Service. These supplies are almost all purchased by the India Office in London, which largely accounts for the predominant position of home manufacturers in the trade.

The imports of instruments, apparatus and appliances on Government account were as follows :—

——	1913-14.	1918-19.	1919-20.	1920-21.
	£	£	£	£
Total imports	136,834	306,939	419,120	602,794
From the United Kingdom	134,656	306,125	415,967	Not available.

Earthenware and Porcelain.—The trade shows a steady growth since the war. The imports were as follows :—

Principal countries of consignment.	1918-19. £	1919-20. £
United Kingdom	176,180	251,472
Holland	3,783	25,637
Japan	163,418	407,422
Total imports	356,952	724,645

The main volume of imports consist of cheap earthenware for bazaar use. This accounted in 1919-20 for £535,434, of which the United Kingdom sent £246,540 and Japan £226,795. Japan steadily increases her supplies of cheap, showy but readily saleable earthenware year by year, and has entirely displaced Germany, Holland and Belgium who, before the war, supplied most of these goods. The articles are mostly of too cheap and low a quality for British makers to compete, and it seems as if we must be content to let this low-grade trade pass into the hands of our Eastern Ally. On the other hand, Staffordshire makes have a great reputation in the medium and best quality goods, but vigilance is required as the quality and attractiveness of the Japanese articles are improving, and we may soon find her a most serious competitor in what has always been essentially a British trade.

Electrical porcelain accounted for £6,661, of which £2,712 came from the United Kingdom and £2,585 from Japan. This is a trade which is worth cultivating, as it is likely to grow with the increased use of electricity in India. It is noteworthy that an attempt has been made to manufacture in Bengal, but so far without very great success.

Japan supplies £178,000 out of a total of £182,000 of other kinds of porcelain, and the United Kingdom is entirely out of this trade, her shipments being only £2,000.

Glass and Glassware.—The following table shows the variety of glass and glassware imported.

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Bangles	194,190	511,386	962,519
Beads and False Pearls ...	92,429	199,423	450,923
Bottles and Phials	203,934	300,664	545,678
Funnels, Globes and glass parts of Lamps.	75,041	188,965	184,151
Scientific Glassware	—	5,538	21,398
Sheet and Plate Glass ...	121,510	360,054	711,108
Tableware	56,410	164,565	154,533
Other Glassware	87,197	267,498	345,874
Total Imports ...	830,711	1,998,093	3,376,184

The sources of the supplies were as follows :—

Principal Countries of Consignment.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	205,626	322,536	667,707
Belgium	181	105,073	466,729
Austria-Hungary	—	63,230	Not available.
United States...	14,695	60,232	,,
Italy	6,986	32,547	104,435
Japan	552,014	1,270,291	1,310,778
Total Imports ...	830,711	1,998,093	3,376,184

Glass Bangles, Beads and False Pearls.—This is a most important trade, but is entirely non-competitive from a British point of view, as the prices ruling are so low that British manufacturers do not find it worth their while to employ their labour and plant on such a comparatively unremunerative trade, and it is doubtful whether they would ever be able to reduce their rates to compete with Japanese labour. Before the war the trade was divided between Austria-Hungary, Germany, France, Italy and Japan. During the war Japan has increased her shipments enormously, and has largely ousted her rivals from the trade. In 1919-20 she supplied 72 per cent., China 12 per cent. and Austria-Hungary 8 per cent. (almost entirely bangles). Shipments from the United Kingdom were negligible.

Bottles and Phials.—Soda water bottles accounted in 1919-20 for £70,026, of which from the United Kingdom £41,868 and from Japan £26,146. Before the war this was almost entirely a British trade, but Japan seized her opportunity, and although the quality of her shipments were, at first, defective, I understand that it has now improved and she is still a serious competitor. In other types of bottles and phials, Japan has 71 per cent. of the trade and the United Kingdom only 17 per cent.—the value of the total trade being £230,638, and the respective shares £164,873 and £39,919.

Funnels, Globes and Glass Parts of Lamps.—This is entirely a Japanese trade. Total imports* were valued at £188,965, of which £162,421 from Japan, £13,169 from United States of America and £9,491 from the United Kingdom. British manufacturers have never been able to compete in this trade either before or since the war, except in the highest grade articles, for which the demand is small. It was formerly a German and Austrian business, but it seems doubtful whether those countries will ever regain their position in face of low Japanese costs of production.

Sheet and Plate Glass.—The total imports in 1919-20 were £360,054, of which the United Kingdom sent £176,933, Belgium £98,395, Japan £55,650 and the United States £22,011. Before the war Belgium supplied 54 per cent. of the trade, representing, in the main, large shipments of cheap window glass. The United Kingdom still supplies the finer qualities of plate and window glass. The following average values per 1,000 superficial feet imported gives a clue to the qualities which each country supplies :—

The United Kingdom ...	£38 per 1,000 superficial feet	
Belgium	£20 do.	do

The total imports doubled in value last year and it is expected that Belgium will have very greatly increased her share.

Tableware (including decanters, tumblers, etc.).—The total trade in 1919-20 was valued at £164,565, of which Japan supplied £154,955 and the United Kingdom £5,960. Before the war, the trade was divided between Belgium, 32 per cent.; Japan, 24 per cent.; Germany, 17 per cent.; and the United Kingdom, 13 per cent.

Cycles (other than Motor Cycles) and Accessories.—This valuable trade has more than quadrupled in the past two years.

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Cycles, imported entire or in sections.	56,045	191,302	557,648
Parts of cycles and accessories (excluding rubber tyres).	71,273	130,221	356,645
Total imports... ...	127,318	321,523	914,293

The total imports from the principal sources of supply were as follows :—

Principal countries of consignment.	1918-19. £	1919-20. £
United Kingdom	82,713	276,951
Japan	34,535	32,223
United States	6,412	11,608
Total imports	127,398	321,523

* During 1919-20.

British makers of cycles have always had the lion's share of the Indian trade. In 1913-14 they shipped 98 per cent., the only other imports being a few machines from Germany. Fortunately they have been able to maintain their position even during the war, and are now increasing their shipments very greatly. In 1919-20, of a total import of 21,912 machines, valued at £191,302, the United Kingdom supplied 21,091 cycles, valued at £187,138. Japan sent 225 machines, value £2,036, and the United States 538 machines, worth £1,614. It is a pity that details as to the source of the imports during the past year are not available. We know that the total imports were 46,706 machines, valued at £557,648. The great rise in prices will be realised when one considers that the average value of each cycle imported in 1913-14 was £3·6, as compared with £11·9 in 1920-21—an increase of over 200 per cent. !

So far as parts and accessories are concerned, the British share of the trade is not so great, although during the past two years a noteworthy recovery has been made. In 1919-20 the United Kingdom supplied £89,913, Japan £30,187 and the United States £9,990 of a total of £130,221. Japanese shipments are falling off as compared with British, and it is expected that we shall regain most of the ground lost during the war. An effort will be required, however, as British makers supplied 96 per cent. of the total imports in 1913-14.

Building and Engineering Materials, other than Iron, Steel, or Wood.—The following are the principal articles included under this heading :—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Asphalt	36,123	41,576	90,227
Bricks	1,406	2,526	22,369
Firebricks	111,343	22,748	101,276
Cement	260,433	926,037	1,394,349
Tiles	76,966	150,980	505,778
Total Imports ...	543,583	1,240,330	2,259,916

Asphalt.—Before the war, and in fact until 1918-19, the bulk of the asphalt was imported from the United Kingdom. In the latter year, however, we note the first large shipment of £28,827 from the Pacific Coast of the United States, and the following year £23,700 worth was obtained from America, which then supplied 60 per cent. as compared with 40 per cent. from the United Kingdom.

Bricks.—This is a very small trade in high-grade bricks for special purposes and is entirely in British hands. The small trade in chalk, lime and clay is also a British preserve.

Firebricks.—Owing to the increasing output of firebricks from Indian works, the imports in future are likely to be reduced and will probably be restricted to specialities which India cannot produce herself. In 1919-20 the United Kingdom supplied practically the whole of the imports, although it should be remarked that in the preceding year severe competition was encountered from the United States of America and Japan.

Tiles.—In 1919-20, the United Kingdom supplied £87,732, Italy £44,648, and Belgium £8,092 of a total trade of £150,980. The British tiles are mostly of the ordinary commercial quality for building purposes. Italy and Belgium, however, supply the high-grade tiles. Bombay is the only large market in India for tiles.

Cement.—More than fifty per cent. of the imports of building materials consist of cement; and apart from trivial quantities for boiler covering and other special purposes, this is almost entirely Portland cement. The following table shows the remarkable increase in British shipments :—.

Principal Countries of Consignment.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	97,980	759,640	1,321,556
Hong Kong	57,424	42,016	28,870
Japan	113,030	97,293	4,434
Total Imports ...	260,433	926,037	1,394,349

During the war, imports from the Green Island Cement Works in Hong Kong and also from Japanese sources were considerable, but the latest figures clearly show that the United Kingdom has little to fear from foreign competition. The most formidable competition is that from works in India. There are at present three large cement works producing in India whose continued output is equal to the total quantity imported during the last year of war. In addition, several other large plants are under construction and will shortly be producing. As I stated in my last report, it has been proved that excellent cement, which will pass the standard tests, can be made in India at a profit. Although the well-known British brands are still the most popular, the prejudice against the local product is being overcome. The raw materials and other necessary conditions are present in the country and the future demand in India is likely to be unprecedented.

Hardware (excluding Cutlery and Electro-Plated Ware).—This heading, according to the Indian Customs, covers a very great variety of articles, the sum total of which amounted last year to no less than £9,083,837.

The principal items were as follows :—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Agricultural Implements ...	126,102	200,704	429,315
Buckets of tinned or galvanised Iron.	2,399	5,354	38,301
Builders' Hardware	129,506	192,135	671,733
Domestic Hardware (other than enamelled Hardware.)	36,908	101,484	271,310
Enamelled Ironware	74,599	293,222	429,784
Gas Mantles	—	47,088	72,961
Implements and Tools (other than agricultural implements and machine tools).	401,630	614,018	1,181,625
Lamps, metal	137,859	343,776	710,077
Parts of lamps, other than glass.	37,209	63,078	178,169
Stoves	Not separately	distinguished.	100,593
Total Imports ...	2,138,897	4,366,220	9,083,836

These enormous totals were obtained as follows :—

Principal Countries of Consignment.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	767,403	2,051,641	5,262,430
Belgium	—	3,034	40,839
Japan	617,529	744,989	758,127
United States of America ...	663,067	1,329,249	2,255,310
Total	2,138,897	4,366,220	9,083,836

This is a most satisfactory showing, as it indicates that the United Kingdom, in spite of enhanced competition, is able to maintain as great a share (55 per cent.) in 1920-21 of a total of £9,000,000, as she did in 1913-14 of a total of £2,600,000. We will now give brief consideration to each of the items in turn.

Agricultural Implements.—Before the war, 90 per cent. of the relatively insignificant imports of agricultural implements were obtained from the United Kingdom. In 1919-20 the British share was 85 per cent., and that of America 10 per cent., while Japan supplied 3 per cent. American shipments are steadily increasing, but Birmingham and Sheffield makers have acquired a reputation for quality, durability and finish which will always stand them in good stead, and it is usual for the management of tea gardens, coffee, rubber and other estates to specify British makes when placing their indents.

Galvanised Iron or Tinned Buckets.—This relatively unimportant trade is practically all British and should remain so.

Builders' Hardware, such as locks, hinges, door bolts, etc.—This trade more than trebled in value in 1920-21 and it is expected that the British share will have largely increased. In 1919-20

the United Kingdom supplied 35 per cent., the United States 38 per cent. and Japan 17 per cent. Both American and Japanese supplies are increasing year by year and these countries have now captured the trade formerly held by Germany.

Domestic Hardware (other than enamelled ironware).—This trade consists mainly of hollow-ware such as kettles, saucepans, iron pots, basins, etc., etc., and the United Kingdom has always held the major portion. Before the war our principal competitor was Germany, but her place has now been taken by America and Japan. In 1919-20 the United Kingdom furnished 43 per cent., Japan 26 per cent., and the United States 18 per cent. As I stated in my last report, Indian fashions are changing and the market is now using increasing quantities of aluminium hollow-ware made in Madras and elsewhere in India from imported sheets and circles.

Enamelled Ironware.—Before the war, Austria-Hungary and Germany controlled this trade but their place has now been taken by Japan. In 1919-20 the Japanese share was 93 per cent. and the British only 4 per cent. In that year Japan shipped £273,000 worth of enamelled ironware to India. It is hoped, however, that the works in India will shortly be turning out appreciable quantities of enamelled ware and it is at least satisfactory to observe that, as the United Kingdom goods cannot compete, the market may be supplied by articles made in the Empire with British capital and management.

Implements and Tools (other than agricultural implements and machine tools).—The import trade almost doubled last year and reached the enormous figure of £1,181,625. As details are not available, we must turn to the 1919-20 returns, which show that of a total import of £614,018 the United Kingdom supplied £359,358, and the United States £240,000. British makers are rapidly regaining their predominant position, but they will have to meet American competition in future in every branch of the trade. The progress made by American shippers has been phenomenal, as the following statistics of American imports show :—

1915–16.	1916–17.	1917–18.	1918–19	1919–20.
£ 56,706	£ 45,418	£ 111,788	£ 177,585	£ 240,983

Metal Lamps.—This is a considerable trade, amounting in value to £710,077 in 1920-21. It is almost entirely in the hands of America, which supplied 87 per cent. in 1919-20, against 8 per cent. from the United Kingdom. American makes, such as the

Dietz, have almost entirely ousted the British article from the market. The average value of the American lamp imported (1919-20) was 4*s*., as compared with 8*s*. in the case of the British article.

Safes and Strong Boxes of Metal.—This trade amounted to £20,520 in 1919-20, and is strongly held by the United Kingdom, which supplied 76 per cent. America sent 9 per cent. It is expected that the British share will have increased during the past year, when supplies were at last available. One prominent British manufacturer is considering the erection of works in India to meet the severe Indian competition in coarse safes, cash boxes, etc.

Cutlery.—The total imports were as follows :—

Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	54,786	106,446	230,298
United States...	41,344	130,316	172,967
Japan...	28,987	88,120	Not available.
Total Imports ...	127,980	339,011	552,039

The latest returns show that the British position has been largely re-established. In the last year before the war, the United Kingdom supplied 43 per cent. of India's demands. Last year her share was 41 per cent. German competition, however, has been replaced by American goods so far as the better qualities are concerned and by Japanese articles in the cheap bazaar trade which was formerly supplied by Solingen. In the small trade in pruning knives, the United Kingdom is supreme, and Sheffield still supplies the bulk of the European and Indian demand for high grade cutlery. It is in the bazaar trade that the competition is most acute. The principal markets are Calcutta and Bombay.

Other sorts of Hardware.—This heading accounted for no less than £4,999,966 last year and comprises the miscellaneous odds and ends constituting the bazaar trade. In 1919-20 the United Kingdom share was 52 per cent., that of the United States 25 per cent. and Japan 14 per cent. It is expected that Birmingham will have improved its position in this section during the past year.

Polishes.—This is a trade worth nearly half a million sterling. It is made up as follows :—

Article.	1918-19.	1919-20.	1920-21.
	£	£	£
Leather Polish	48,810	148,550	321,535
Metal Polish	45,260	64,999	93,399
Wood Polish	—	—	10,254
Total	94,070	213,549	425,188

British makers are strongly represented in India and have the bulk of the trade. In polishes for application to leather the British share in 1919-20 was 89 per cent. and America supplied 10 per cent. In metal polishes the respective shares were 73 per cent. and 17 per cent. Japan sent 3 per cent.

Arms, Ammunition and Military Stores.—This is a very large group, which includes firearms and cartridges for sporting purposes and for the protection of crops against dacoits, wild animals, predatory birds, etc. Explosives for industrial purposes are also included. It should be noted, however, that imports of arms, ammunition and stores for official military use are not included here, but are grouped under the heading of Government Stores. The total imports of the above heading on private account were 1918-19—£256,999, 1918-20—£371,107, and 1920-21—£639,563.

Cartridges.—In filled cartridge cases, the trade is about equally divided between the United Kingdom and United States, the respective figures in 1919-20 being £55,456 and £52,616 of a total import of £108,339. The same position is seen in the case of empty cartridge cases—the figures being £5,965 and £5,319 of a total of £11,285. Before the war the trade in cartridges was 90 per cent. British, and the market has always been carefully fostered by means of agents and also travelling representatives who visited the country each cold weather. I think it will be found when last year's figures are analysed that the British share has largely increased now that the Home works are transferred from war to peace conditions.

Firearms and parts thereof.—The trade is considerable. Total imports, 1918-19 £31,348, 1919-20 £91,277 and 1920-21 £235,670. Before the war, we supplied 79 per cent. of the trade and the United States 6 per cent. In 1919-20 the British share was 60 per cent. and that of the United States had risen to 33 per cent. It is expected that the United Kingdom will be found to have greatly strengthened its position when detailed figures for last year are forthcoming. American competition in rifles is most successful, and such makes as the Winchester and Remington have entirely replaced the Mäuser and Männlicher weapons which had a strong position before the war. It is principally in the cheaper machine-made rifles and guns where the American factories, with standardisation and large scale output, can undersell us. The leading Birmingham makers,

however, are now adopting large-scale production and are already improving their position. In high-class shot guns, where workmanship and finish are the main desiderata, British makers have practically no competition and their productions are unexcelled.

Explosives.—This is a solidly-British trade and is so well organised that it is difficult to see how foreign competition can become serious. The various items are as follows:—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Blasting Fuze	22,076	19,397	32,488
Blasting Gelatine	3,392	32,673	32,665
Dynamite	26,728	14,685	34,490
Gelatine Dynamite	75,392	17,369	28,735
Other Nitro-compound Explosives	—	10,638	18,031
Detonators	—	5,406	9,490
Total Imports	153,827	112,760	169,298

Thanks to the excellent organisation of the Nobel and other British companies, the trade is entirely British. In 1919-20 a consignment of blasting gelatine was received from Natal, but this was simply a supply made by a branch works in South Africa. The trade is certain to increase with the growth of mining and large civil engineering works involving blasting. Madras is the principal port of entry owing to the proximity of the Kolar Goldfields, the largest individual consumer.

Brushes and Brooms.—This trade was well maintained during the war and has nearly doubled during the past year. The principal items are as follows:—

Description.	1918–19.	1919–20.	1920–21.
	£	£	£
Paint and Varnish Brushes	Details not received.	10,644	41,625
Toilet Brushes ...		36,907	54,273
Other Brushes ...		43,972	73,085
Brooms		4,472	4,195
Total	45,960	95,995	173,178

Before the war, the British share was 54 per cent. of the total trade, Germany and Austria-Hungary being the two principal competitors. In 1919-20 our share was 45 per cent. and the place of the Central Powers was taken by Japan and the United States with 37 per cent. and 15 per cent., respectively. British shipments increased considerably last year, and it is expected that we shall at least have attained our pre-war position. In paint and varnish brushes the British article is supreme, the

only competition being that from America, which supplied 18 per cent. It is in the cheap varieties of toilet brushes that Japanese efforts have been most successful. In 1919-20 the United Kingdom supplied only 16 per cent., while Japan sent 62 per cent. and the United States of America 21 per cent. The following are the average values in each case per dozen brushes imported :—

United Kingdom	£0·53	per dozen average.
United States	£0·72	do.
Japan	£0·12	do.

This shows clearly that while the United States competes with us in the better qualities, Japan's trade is almost entirely in the cheap meretricious brushes for the bazaar trade. Brushware, Ltd., the Cawnpore firm which was started to make brushes in India during the war, is having a successful career and has paid dividends averaging 30 per cent. during the past five years.

Toys and Requisites for Games and Sports.—This is a large and varied trade, as it includes playing cards, toys and every form of sports goods, including fishing tackle. The imports under this heading were as follows :—

Principal Countries of Consignment.	1913–14.	1918–19.	1919–20.
	£	£	£
United Kingdom	112,375	55,248	91,296
Germany	77,282	—	110
Austria-Hungary	29,992	—	—
Japan	34,138	105,125	247,009
United States	15,011	65,351	165,748
Total Imports ...	294,451	234,323	524,425

The total imports in 1920-21 were £590,975, but it is not to be supposed that the relative positions of the three principal competitors will have changed.

Toys are the most important item. The total imports in 1919-20 were £287,056, of which £240,055 worth came from Japan, £29,489 from the United Kingdom and £10,311 from the United States of America. Japanese dolls and mechanical toys are absurdly cheap and their quality is improving so that they will probably retain this trade even when Germany and Austria recover.

As regards general requisites for games and sports, British makers still hold the trade, and our leading brands of tennis racquets, golf clubs, footballs and requisites for polo, cricket and hockey are the favourite ones. In 1919-20, 74 per cent. of the imports were drawn from the United Kingdom, 11 per cent.

from the United States, 7 per cent. from Japan and 5 per cent. from Norway. The most serious competition is that from the factories established at Sialkot, in the Punjab, some of which are producing admirable racquets, polo and hockey sticks, cricket bats and even footballs.

The trade in playing cards is virtually a monopoly of the United States. Of a total import of £167,128 in 1919-20, the United States supplied £146,553, the United Kingdom £10,104 and Belgium £5,852. This has never been a British trade. Before the war our imports were only 9 per cent. as compared with 6 per cent. to-day.

Tea Chests (entire or in sections).—This is a most important trade worth over a million sterling per annum of which the United Kingdom before the war had almost a monopoly. The latest statistics are the following :—

Origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	241,385	332,761	775,275
Russia	3,227	149,597	138,579
Japan	303,082	108,253	52,495
Total Imports ...	606,736	696,884	1,022,019

It is most satisfactory to observe that the United Kingdom has almost entirely regained her position in this trade. During the war, Japan supplied 50 per cent. of India's requirements, and it is noteworthy that imports from Russian Pacific ports were appreciable until the collapse of that country in 1917, which affected the 1918-19 returns. In 1919-20, however, we find that Northern Russia supplied £105,320 and the Pacific ports £44,277, and the total slightly declined last year. These shipments are probably mainly those of Venesta boxes. The imports of metal chests are very small (£23,889 in 1919-20) and practically the whole is supplied by the United Kingdom with £1,293 worth from Ceylon. The whole import is taken by Madras. The factories in Bengal for the manufacture of three-ply wood and chests are having a somewhat chequered career and the local competition is so far not serious.

Umbrellas and Umbrella Fittings.—The imports of complete umbrellas, including parasols and sunshades, were as follows :—

Origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	33,487	40,531	150,699
Japan	8,402	20,064	17,515
Total Imports ...	51,444	70,754	192,140

The recovery in the British position is noteworthy. Competition from Japan is being gradually reduced and the only other foreign rival is France. The Straits Settlements and Hong Kong send considerable quantities of oiled paper and other Oriental umbrellas which do not compete.

The position, however, is not quite so satisfactory in respect of umbrella fittings, the imports of which were as follows :—

1918-19.	1919-20.	1920-21.
£	£	£
62,891	133,139	203,484

In 1919-20 the United Kingdom only furnished 37 per cent., while Japan headed the list with 50 per cent. and the United States sent 11 per cent. The Japanese products were, in the main, cheap fittings for the bazaar trade. It should be noted that the umbrella cloth for the covers of those umbrellas made up in India is almost entirely obtained from the United Kingdom.

Jewellery and Plate of Gold and Silver (excluding imitation Jewellery, Precious Stones and Pearls, unset).—The total imports were as follows :—

Article.	1918-19.	1919-20.	1920-21.
	£	£	£
Jewellery	19,610	58,950	131,565
Plate of Gold and Silver ...	20,313	63,616	134,489
Total Imports ...	39,923	122,566	266,054

The United Kingdom and Ceylon supply practically all the jewellery imported, the shares in 1919-20, being 45 per cent. and 32 per cent. Small quantities were obtained from the Straits Settlements, America and Japan. As regards gold and silver plate, the United Kingdom sends 56 per cent., China 30 per cent. and a small quantity is imported from the United States. The trade is satisfactory and does not call for comment.

Electro-plated Ware.—The imports were :—

1918-19.	1919-20.	1920-21.
£	£	£
27,540	54,343	156,690

This is a steady trade in the best qualities and British makers have always held their own. In 1919-20 the United Kingdom supplied 92 per cent. and the United States 5 per cent.

Carriages and Carts (excluding Railway Carriages) and parts thereof.—The total value of the trade is considerable and is increasing.

——	1918-19.	1919-20.	1920-21.
	£	£	£
Total Imports	71,997	286,250	821,452

In view of the number of excellent carriage-builders in India, the number of complete carriages and carts imported is practically stationary. In 1919-20, of a total import of £57,165, the United Kingdom supplied £30,762, Japan £18,419 and the United States £4,000. Before the war, Germany was our principal competitor. In view of the increasing use of motors, this trade would not appear likely to show any great expansion in the future. Parts of carriages and carts (excluding rubber tyres) show a very satisfactory increase and the imports in 1919-20 totalled £215,726, of which the United Kingdom supplied £130,188, the United States £64,714 and Japan £6,334. The development of motor body building in India will give a great fillip to this trade, as the bulk of the parts and fittings must be imported. It is this extension which accounts for the enhanced value of imports from America since the close of the war.

The imports of perambulators and children's go-carts is very small—£13,307, and is drawn principally from the United Kingdom (£11,217), and the United States (£1,627). As the trade is practically restricted to the needs of the European population in India, it is not capable of great expansion.

Bobbins.—This has, hitherto, always been an exclusively British trade, mainly in the hands of one Liverpool firm, but Japanese bobbins obtained a foothold during the war. The figures are as follows :—

Source of Imports.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	73,200	177,380	516,600
Japan	175,792	210,612	97,000
Total Imports ...	249,115	387,992	618,800

It is most satisfactory to note that the United Kingdom is rapidly regaining her predominant position in the trade and that Japanese shipments are being reduced. Attempts are being made to manufacture bobbins in India, but so far without much success. The whole secret of bobbin making apparently lies in correct and complete seasoning of the timber, and although some Indian woods might be suitable, there is little likelihood of local manufacture being successful unless it is handled by experts. Five-sixths of the imports of bobbins into India are for use in the cotton mills in Bombay and the remaining one-sixth are for account of the Calcutta jute mills.

Oil Cloth and Floor Cloth.—The imports have increased considerably since the war.

——	1918-19.	1919-20.	1920-21.
	£	£	£
Total Imports	68,908	70,603	284,889

Sixty-four per cent. of the goods in 1919-20 were obtained from the United Kingdom, 35 per cent. from the United States and 1 per cent. from Japan. The trade before the war was mainly British, and it may safely be assumed that the United Kingdom increased her proportionate share of last year's increased imports.

Furniture and Cabinetware.—The following were the total imports :—

1918-19.	1919-20.	1920-21.
£	£	£
91,184	133,179	545,371

This trade was mainly British before the war, but our goods have had to yield place to American and Japanese articles. In 1919-20 the United Kingdom supplied 41 per cent., the United States 24 per cent. and Japan 21 per cent. Ceylon, the Straits Settlements and Hong Kong contributed small quantities of oriental furniture. Bedsteads accounted for £22,371, of which £14,414 was contributed by the United Kingdom and £6,944 by the United States of America. Furniture of wood (other than bedsteads) amounted to £26,399, of which £8,778 from the United Kingdom, £8,369 from the United States and £4,557 from Japan. Furniture (other than bedsteads) of other materials than wood was valued at £66,314, and the United Kingdom sent £31,414, the United States £11,305 and Japan £16,422. The trade in mouldings, worth £18,095, was divided between Japan, the United States and Italy. There is room for greater effort on the part of British furniture manufacturers in order to recover the lost ground.

Packing (Engine and Boiler, of all kinds, including asbestos).—This is a considerable trade, particularly in Calcutta, and deserves mention. The total imports were : —

1918-19.	1919-20.	1920-21.
£	£	£
72,826	97,322	54,692

Great Britain supplied 93 per cent. in 1919-20, the only other imports being 4 per cent. from the United States of America and 2 per cent. from Japan. All the standard British makes are well-known in the market and the trade is actively canvassed. The business should increase in view of the industrial expansion in India.

Toilet Requisites.—The movements in this business during the past three years have been as follows :—

——	1918-19.	1919-20.	1920-21.
Total Imports	£ 263,755	£ 402,095	£ 544,985

The heading comprises all toilet requisites not specially enumerated elsewhere. The origin of the imports in 1918-19 and 1919-20 was as follows :—

Country of origin.	1918-19.	1919-20.
	£	£
United Kingdom	109,348	162,841
United States	77,618	125,804
Japan	68,275	99,450
Total imports	263,755	402,095

The United Kingdom is rapidly losing this trade to her two principal rivals. American specialities fill the chemists and druggists stores in India and are also obtaining a firm footing in the bazaars. Japanese imports are almost entirely for Indian use.

Articles Imported by Post.—The imports by parcel post into India are enormous, the totals being :—

1918-19.	1919-20.	1920-21.
£	£	£
3,308,979	3,945,153	7,135,003

In 1919-20, no less than 88 per cent. were derived from the British Empire (principally the United Kingdom, Egypt, Ceylon, Aden and the Straits Settlements), 6 per cent. from Japan, and 4 per cent. from France. The imports consist largely of articles of apparel, such as dress goods, millinery, etc., and also general supplies for the retail trade, the purchasing agents of which are usually London firms. Many European residents obtain their articles of every-day use by post from home, and this helps to swell the total.

A cash-on-delivery parcel system between the United Kingdom and India was inaugurated last year, but it is not yet sufficiently well-known for any definite opinion to be stated as to its results. It is a step in the right direction and should be of great benefit both to the large home stores, and also to residents in India. It is not expected seriously to affect the business of the British stores in India, but should provide a wholesome check on the prices charged.

Raw and Semi-Manufactured Articles.

So far in this Chapter the analysis has been confined to the changes in the Indian market for manufactured goods. We will now briefly consider those raw and semi-manufactured products in which the United Kingdom conducts an important export trade with India. Of these, the following are the most important :—

Coal, Coke and Patent Fuel.—The imports of coal have fallen considerably during the war, and in 1920-21 were only 16 per

cent. of the imports in the last pre-war year. The figures are as follows :—

Country of Origin.	1913–14.	1918–19.	1919–20.	1920–21.
	Tons.	Tons.	Tons.	Tons.
United Kingdom	155,390	7,691	6,935	9,209
Natal	118,532	17,417	17,057	6,900
Portuguese East Africa ...	79,333	32,930	5,274	18,430
Australasia	47,329	3,119	3,554	33,678
Total Imports	531,814	66,634	38,180	85,993

The imports of coke and patent fuel were as follows :—

Description.	1913–14.	1918–19.	1919–20.	1920–21.
	Tons.	Tons.	Tons.	Tons.
Coke	16,766	1,174	1,242	1,003
Patent Fuel	10,610	—	30	—

The imports of coal before the war were mainly of Welsh Steam coal for the East Indies Squadron and the Royal Indian Marine, and also of lower qualities for bunkering purposes. The effect of the fall in the exports of British coal and the enormous increase in its price during the past three years are clearly shown in the negligible amount exported to India. In 1920-21, the average value per ton of British coal imported was £5.28 as compared with £2.9 in the case of Natal and £3.37 in the case of Australia. British imports were clearly confined to the best steaming varieties. At the present time the demand for coal in India is most pressing. The output of the Indian collieries has been steadily declining *pari passu* with each advance in wages, there is a most serious shortage of coal wagons on the railways, and the Government of India have been obliged to control the exports as the essential industries of the country are short of their normal supplies. It is a melancholy result of the troubles in the coal trade at home that the United Kingdom should have been out of the Indian coal market for such a considerable period during this year.

Mineral Oils.—Apart from the enormous production in Burma, India imports very large quantities of mineral oils from overseas, and although these are not directly supplied by the United Kingdom, with the exception of the supplies from the Standard Oil Company of New York and its associated concerns, they are largely British controlled.

Kerosene.—This is the most important item. The supplies were derived as follows :—

Country of Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
Russia	—	—	40,970
Persia	116,713	1,146,101	262,829
Straits Settlements (including Labuan).	—	301,086	193,516
Borneo...	1,041	1,426,142	642,205
United States of America ...	590,321	3,750,065	3,167,518
Total Imports ...	708,110	6,623,422	4,307,298

The Standard Oil Company of New York maintain their position as the leading importers, but the Asiatic Petroleum Co., Ltd., are competing more and more. The most striking feature of the trade is the increase in the imports from the Anglo-Persian Oil Company's valuable field in Southern Persia. Their refinery is at Abadan on the Shatt-el-Arab below Basra, and the short sea voyage from there to Karachi and Bombay should place them in a favourable position *vis-à-vis* other overseas competitors.

Fuel Oils.—The imports were as follows :—

Country of Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
Persia	267,025	323,797	365,873
Borneo	52,089	330,918	610,135
Total Imports ...	361,390	714,342	1,183,935

It is satisfactory to note in this rapidly increasing trade that the imported supplies are almost entirely in British hands.

Lubricating Oils.—These are classified by the Customs under (1) batching oils and (2) other lubricating oils. The imports of batching oils for use in the jute mills at Calcutta are considerable as the import figures show :—

1918-19.	1919-20.	1920-21.
£	£	£
Not specially classified.	384,830	655,169

Sixty-five per cent. of the supplies were obtained in 1919-20 from the United States of America (mainly from the Pacific coast), and 30 per cent. from Dutch Borneo. The United Kingdom supplied a negligible quantity valued at £14,000.

The trade in lubricating oils for general purposes is much more extensive and is a trade of considerable importance to the United Kingdom. The total imports were :—

1918-19.	1919-20.	1920-21.
£	£	£
Not specially classified.	1,391,509	1,977,907

In 1919-20 the United Kingdom supplied only 16 per cent. and the United States 82 per cent. The United States has a very strong position in the Indian market, and the Vacuum Oil Company and other lesser concerns maintain an active selling organisation. It is satisfactory to note that the British selling organisation has recently been augmented and strengthened, and it is hoped that our position will be improved considerably in the next few years. The demand for lubricants for machinery is certain to increase in India with the extension of industries, and it is to be hoped that British manufacturers will increase their share of the trade.

Vegetable Oils (other than Essential Oils).—The imports are as follows :—

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Cocoanut oil	26,521	9,235	74,409
Linseed oil	292	64,370	150,811
Tung oil	—	—	85
Total Imports ...	31,609	86,638	247,620

Cocoanut oil is obtained exclusively from Ceylon and the Straits Settlements. In my last report I mentioned the oil mills which the Tata Oil Mills Co., Ltd., were erecting at Ernakulam in Cochin State. Conditions have so far not been favourable and the mills are doing very little at present. Local prices of copra have remained at a high figure and the London market for oil has fallen considerably, so that it is not possible to express an opinion on the probable effect of their competition.

The whole of the linseed oil imported in 1919-20 was obtained from the United Kingdom. There is little doubt but that India will eventually crush and refine her own linseed oil, in which case it will be almost impossible for the United Kingdom to compete, as she has to import most of her raw materials.

The import of castor, groundnut, cotton seed, sesamum and mustard oils are negligible, as these oils are largely crushed in the country.

Animal Oils.—The imports have fallen considerably of recent years, but the United Kingdom still provides the bulk of the supplies :—

—	1913-14.	1918-19.	1919-20.	1920-21.
	£	£	£	£
Total Imports	76,237	2,656	13,374	8,353
From United Kingdom ...	69,245	2,441	13,315	Not available

Three-quarters of the imports represent fish oil, and the probable reason for the decline in the import trade is the increasing production of fish oil in the Madras Presidency.

Essential Oils.—This is a small, but highly-competitive, trade and is fairly evenly distributed between the three principal sources of supply. The figures are :—

Country of Origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	13,345	16,513	Details not available.
Ceylon	3,132	9,228	
France	9,500	16,344	
Japan	3,331	18,438	
Total Imports ...	36,118	72,820	167,155

Before the war Germany was the principal supplier, but her place is now occupied by France and Japan.

Salt.—This is an important trade which has shown a steady advance during the past three years. The subjoined table illustrates the position :—

Country of Origin.	1918-19.	1919-20.	1920-21.
	£	£	£
United Kingdom	160,285	391,364	358,538
Spain	59,340	299,511	247,930
Aden and Dependencies ...	390,157	604,135	675,287
Egypt	785,194	551,515	443,410
Somaliland and Eritrea ...	157,200	246,196	186,472
Total Imports ...	1,554,018	2,095,239	2,281,346

The rise in the value of British shipments is satisfactory, but the United Kingdom is still far short of the pre-war position. Taking an average of the five pre-war years, we find that Liverpool supplied 29·3 per cent. of India's imports. Last year the figure was only 15 per cent. The most noteworthy increases have been in the imports from Aden and the opposite African littoral of Somaliland. As hitherto, Bengal and Burma consume the bulk of the imported salt, the other provinces relying on the domestic production.

Sugar and Manufactures thereof.—Sugar is second only to piece goods in the import trade of India, and the imports last

year of raw sugar, of 16 Dutch standard and above, were valued at £16,945,867.

The imports of sugar, 16 Dutch standard and above, were as follows :—

Country of Origin.	1918-19.	1919-20.	1920-21.
	Tons.	Tons.	Tons.
Straits Settlements	62,130	18,144	8,935
Java	363,074	349,266	201,109
China	2,888	12,090	5,926
Egypt	853	3,305	4,188
Mauritius and Dependencies ...	77,180	23,486	11,487
Total Imports	506,680	408,375	236,184
Total values in £ (1,000)	10,245	21,826	16,946

The average declared value of sugar (16 D.S. and above) in the year 1919-20 was Rs. 26.11.8 per cwt. It is interesting to observe that, in 1920-21, 1,765 tons of beet sugar were imported into Karachi from Central Europe.

Other imports of sugar were as follows :—

Article.	1918-19.	1919-20.	1920-21.
	£	£	£
Sugar (15 D.S. and below) ...	68	15,693	42,021
Molasses	125,450	893,853	1,047,362
Confectionery	37,207	212,504	393,581
Saccharin	1,004	44,570	74,427

The imports of molasses are nearly all drawn from Java, while those of saccharin are obtained mainly from the United Kingdom, with lesser quantities from France and the United States.

Confectionery.—It is in confectionery, however, that British manufacturers have the greatest interest and supply the bulk of the trade. The provenance of the imports in 1919-20 was as follows :—

	£
From the United Kingdom	152,444
,, the United States	31,616
,, Japan	16,490
,, Holland	5,589
Total imports	212,504

The demand in India for sweets of all kinds is almost insatiable. Owing to the frugal, vegetarian diet of the greater part of the

population, sugar is required in large quantities to maintain strength. The great demand is met by native preparations, and there are, also, one or two modern factories in Madras and elsewhere for the manufacture of sweets on a large scale. Imports are likely to increase, and the United Kingdom should maintain her position if our manufacturers only insist on efficient representation. The United States is competing more and more in chocolates and the best quality sweetmeats. Japan contributes the cheaper productions from sugar.

Tallow and Stearine.—The imports were as follows:—

1918-19.	1919-20.	1920-21.
£	£	£
88,640	225,356	482,735

In 1917-18 and 1918-19 there were spasmodic shipments of which the bulk came from Australia and £29,500 from the United Kingdom Japan sent 33 per cent. and Belgium 6 per cent.

Parts of Ships (including Launches and Boats).—This again is a British trade, as will be seen from the imports.

Countries of Origin.	1918–19.	1919–20.	1920–21.
	£	£	£
United Kingdom	103,930	275,795	Not available.
United States	10,500	12,281	
Total Imports	136,688	294,837	222,046

In 1917-18 and 1918-19 there were spasmodic shipments of £10,341 and £21,781 from the Pacific Coast of Canada, but these ceased in 1919-20. In my last report I referred to the good work in the way of launches, barges, lighters, motor boats, which was being turned out of Indian yards on the Hooghly and also in Bombay, largely as a result of the direct stimulus of the war. This work is still being done, the steel plates, many of the sections and the engines being imported. The plate mill at the Tata Steel Works at Jamshedpur will shortly be in work and a local supply of ship's plates will give a further fillip to the industry. There is apparently no reason why shipbuilding yards in Calcutta and Bombay should not construct vessels up to 2-4,000 tons. A reduction in the import of British steel plates and sections may be one result of increased Indian activity in this direction, but, on the whole, the development of Indian shipbuilding should result in an increased import trade in marine engines and parts thereof and in the numerous items in the equipment of a modern steamer which will not be made in India for many years. One of the leading British manufacturers of shallow-draught vessels, motor launches, &c., is firmly established in Calcutta and is securing a fair share of the trade in the lighter work.

Ivory.—The imports of ivory are considerable and are drawn, in the main, from the London market. The figures are :—

Description.	1918-19.	1919-20.	1920-21.
	£	£	£
Unmanufactured Ivory ...	151,800	505,068	216,624
Manufactured Ivory ...	10,421	23,180	15,562
Total Imports	162,221	528,248	231,886

The imports of unmanufactured ivory are drawn almost exclusively from the British Empire. In 1919-20, the United Kingdom market contributed no less than £211,925, the East African Protectorate £172,507 and Zanzibar £44,388. The only foreign country participating in the trade was Portuguese East Africa, which shipped £10,099 worth. The ivory is made up by Indian craftsmen into works of art and the whole import trade is centred in Bombay. As might be expected, the imports of manufactured ivory are very small—only £23,180 in 1919-20, of which the United Kingdom sent £12,180, Japan £3,494 and France £3,067. The imports consisted of carved ivory contained in *objets de vertu*, which had been purchased abroad.

CHAPTER V.

GOVERNMENT SUPPLIES.

The value of the annual purchases in the United Kingdom of Government Stores for shipment to India is so great and the changes in the procedure of purchase now decided on by the Government of India are likely to be so far-reaching in their effects on those British firms who have hitherto supplied the bulk of the Stores that it appears to be desirable to consider the present position at some length.

Scope of the trade in Government Stores.—The following table shows the total value of Government Stores imported into British India by sea during the years 1907-08 to 1919-20.

	£		£
1907-08	4,429,000	1914-15	4,668,000
1908-09	5,008,000	1915-16	4,122,000
1909-10	3,627,000	1916-17	7,076,000
1910-11	2,901,000	1917-18	9,287,000
1911-12	3,654,000	1918-19	13,019,000
1912-13	3,754,000	1919-20	13,730,000
1913-14	5,373,000	1920-21	10,538,000

These Stores include all purchases made for Government account in all Departments, but they are principally for account of the Army Department, Medical Services, Government-worked Railways, Posts and Telegraphs and Public Works Departments.

In Appendix XIII, page 280, will be found the values of the imports of each of the principal articles of purchase, from which it will be observed that the heaviest purchases are of railway plant and rolling stock; iron, steel, copper and other metals; machinery; instruments and apparatus; paper and stationery; telegraph materials; arms and ammunition and textiles.

In Appendix XV., page 282, a table compiled by the Stores Department of the India Office for the use of the Stores Purchase Committee gives the expenditure in the United Kingdom during the years 1910-11 to 1918-19 on Stores procured for shipment to India.

A comparison of these two tables shows that the United Kingdom has hitherto had the virtual monopoly of the trade and that the articles purchased from foreign countries have been largely of a non-competitive nature. In the last pre-war year, 93 per cent. of the imported Stores were obtained from the United Kingdom. During the war, Australia supplied considerable quantities of unwrought copper, woollen piece goods, wool and other raw materials, and in the year 1919-20 the imports of Stores from the United States amounted to over £2,500,000, owing to the transfer to India of a large number of railway wagons which had been built in America during the war for account of Russia. This last transaction, however, is quite exceptional and the import of American wagons is not likely to be repeated.

The India Office Stores Department.—Imported Stores have usually been purchased by the Stores Department in London, which has lately been transferred from the direct control of the India Office to that of the High Commissioner for India. This Department keeps lists of approved manufacturers in the United Kingdom and calls for tenders, places orders, inspects deliveries and arranges for shipment from London or other home port.

The functions of the Department are divided into three main sections—purchase, inspection and shipment. Indents are received from India at all times of the year. When a demand is received, the items are divided into groups (called draft orders) each suitable for a separate contract. These draft orders are referred to the technical officers attached to the Department for the necessary designs, specifications, drawings, and other information necessary for the guidance of firms to be invited to tender for their supply. Pattern numbers, when necessary, are also quoted, so that tenderers may see at the pattern room the precise article required. The draft orders when thus completed are returned to the Director-General of Stores and are then ready for the invitation of tenders.

Tenders are obtained in three ways :—

(1) by advertisement (" open tenders ") ;

(2) by invitation to a limited number of firms (" limited tenders ") ;

(3) by invitation to one firm only (" single tender " or private purchase).

It is left to the discretion of the Department to decide which of the above three ways shall be adopted. When limited tender is adopted the names of the firms to be invited are as a rule determined as follows :—

A register is kept under the various heads of supply of firms known to be willing and able to execute contracts. Every effort is made to have full and, at the same time, efficient lists, and every encouragement is given to firms desirous of being recorded, but before noting new firms in the register, inquiry is made by reference to other Government Departments or to large private firms in order to ascertain the ability of the applicants to execute contracts satisfactorily. In many instances the firm is also asked to send samples of its work for examination and its works are visited. Firms are also required to give an undertaking that they will comply with the terms of the Fair Wages Resolutions of the House of Commons, dated 13th February, 1891, and 10th March, 1909. When thought necessary, names are removed from the register. It is from this register that the names of firms to be invited to tender for a contract are selected by the Director-General of Stores or by the Deputy Director-General.

Competitive tenders are generally invited except in the case of :—(1) patents and specialities, (2) comparatively small supplies, and (3) highly-finished work, such as surgical and scientific instruments. For these it is not unusual to invite single tenders from thoroughly reliable firms, as it has been found by experience that competition is liable to result in lower prices at a sacrifice of quality.

All contracts are made and signed by the Director-General of Stores or other officers authorised by the High Commissioner to sign on his behalf. The firms whose tenders are not accepted are informed to that effect.

Certain Stores, mainly those required for railways, such as locomotive engines, rolling stock, bridgework, permanent way materials, special machine tools and plant (but not as a rule ordinary plant and machinery, tools or general stores), are inspected by the consulting engineers. Vessels and their structural outfit and machinery are inspected by the Naval Architect. All other Stores, when not obtained from and inspected by another Government Department, are inspected by the staff of the Department under the Superintendent of the Indian Store Depôt. Miscellaneous articles of comparatively small bulk and

weight and certain special stores, *e.g.*, cloth, are inspected at the India Store Depôt. All other Stores are inspected at the contractors' works.

When the Stores have passed inspection, they are packed or prepared for shipment, either at the India Store Depôt when examined there, or by the contractor at his own works, where the packing is done under the supervision of the inspecting officer, but in such cases the contractor is held responsible under the contract for the packing being sufficient to ensure the safe arrival of the Stores at their destination in India.

All Stores, from whatever source obtained, are shipped by the Stores Department, which engages the necessary tonnage by direct contract with the shipowners. Acceptance of freight tenders is subject generally to the same rules as those governing the acceptance of tenders for Stores.

When Stores have been delivered and approved, the contractor submits his claim for payment and this, if correct as to quantities, is passed to the Director-General of Stores with a certificate from the Superintendent of the Depôt that the Stores claimed for are satisfactory and have been delivered and taken into store preparatory to shipment, or have actually been shipped. The Superintendent notes on the claim the delay, if any, which has occurred in delivery, and states whether such delay is due to fault or omission on the part of the contractor, and whether or not remission of penalties for delay is recommended. The Director-General decides whether or not to enforce the penalties if the case lies within the sanctioned limits of his powers. If outside these limits, he decides whether to recommend to higher authority that the contract time for delivery be extended or that the penalties incurred be not enforced, and if so, on what grounds. The claim is passed with an appropriate certificate by the Director-General to the Accountant-General who checks the rates from the copies of the contracts furnished to him, and after calculating and deducting any penalties due pays the claim. Instalment payments are made as delivery proceeds provided that the instalment claimed is not unreasonably small. Sometimes instalment payments in respect of large installations of plant are made on the certificate of the inspecting authority that the work done and the materials provided justify such payment. In that case an undertaking is first obtained from the contractor that he will hold the Stores as the property of the Secretary of State in Council and that in the event of delivery not being made in accordance with the contract he will on demand refund the amount paid.

Some Comments on the System.—The fact that the headquarters of the purchasing agency is in London ensures that the Director-General of Stores and his consulting engineers are in touch with all the latest improvements in design and industrial

practice. If an indent for an entirely novel form of plant or a new process is received, reference can be made to the leading makers, and the Department is therefore in close contact with the leaders of industrial and manufacturing development. The system has been found to be satisfactory from the point of view of indenting Departments in India. The Stores Department, being a large buyer, obtains the best trade terms from manufacturers for even small orders in consideration of the large orders which are placed from time to time. Dealings are made with manufacturers direct thus eliminating intermediate profits. The system also relieves the indenting officer in India from the trouble and responsibility of inspection. In most cases, public works, railway and other officers in India are out of touch with the latest industrial practice. They, consequently, know very little about the manufacture or the market value of the goods they propose to purchase and are usually unable to receive sound and disinterested advice on these matters in India. It is stated that, with the exception of the Railway Board and the Ordnance Department, no Department of Government in India was provided before the war with an efficient organisation for the inspection of local purchases, and without such organisation it is obvious that Government Officers could not safely enter into large local contracts.

On the other hand, there are a few serious disadvantages to the system. For instance, in many cases the indenting officer would send home a statement that he required a plant for a given purpose. Specifications would then be drawn up by the consulting engineers in London, the plant would be purchased and shipped, and on arrival in India it was sometimes found to be unsatisfactory owing to some climatic or other special reason, peculiar to the country, of which the buyer in London was not aware. Moreover, in some cases the machinery was unsatisfactory or uneconomical owing to faulty erection. It must be remembered that there are few trained erectors in India, except those in the employ of British manufacturers, and the average Government engineer has neither the time nor the specialised knowledge to supervise the erection of highly-technical plant. Most of these difficulties, however, could be overcome if indents were placed with the local branches in India of British manufacturers, who usually maintain a staff of trained engineers and erectors in India, and who could in many cases supply the requirements of Government more expeditiously, economically, and infinitely more satisfactorily direct rather than through the India Office in London.

Growth of Feeling in India in favour of increased purchases of Stores in the Country.—There has been a growing feeling for many years among all sections of Indian opinion, and particularly among Indian industrialists, that Government should adopt a more liberal policy in regard to the purchase by Government Departments of such articles as are, or can be,

manufactured in the country. The Government of India have made several efforts during the past forty years to obtain sanction for relaxations of the Stores Rules, both in respect of the encouragement of local industries and of the local purchase of imported Stores. The rules were modified in 1909 and again in 1913, and indenting officers were authorised, within certain limits, to purchase locally, wherever possible, in such cases where a saving in expense or time would thereby be effected. An injunction, however, was added that articles not manufactured in India must be obtained by indent on the Stores Department of the India Office except when the article is in India at the time of order and the cost does not exceed Rs.3,000, unless the urgency clause can be invoked. Owing to lack of inspecting organisation and technical knowledge, however, indenting officers have usually taken the line of least resistance, and, prior to the outbreak of war, the volume of local purchases showed little tendency to increase.

Effect of the War.—The outbreak of war brought the whole question to a head. Every effort was made to utilise the manufacturing resources of the United Kingdom for war purposes and also to conserve tonnage; the prescription of the Stores Purchase Rules were allowed to fall largely into abeyance, with the result that India was encouraged to purchase as much as possible in the local market and to restrict home indents to Stores which could not be obtained from any other source. The results, as seen in the provenance of Stores purchases during the War period, are remarkable. In Appendix XIV (page 281) will be found tables, compiled for the use of the recent Stores Purchase Committee, giving the average annual value, in thousands of rupees, of Stores purchased by Government Departments and Railways during the pre-war period 1910-11 to 1913-14 and also during the war period 1914-15 to 1918-19, while in Appendix XV (page 282) an analysis is made of the expenditure according to whether it was incurred in India or in the United Kingdom. The following summary of the percentage results of these tables is rather striking :—

	Pre-war period. 1910-11 to 1913-14.	War period. 1914-15 to 1918-19.
Produce of India:	%	%
From Government factories	9·5	5·3
From private dealers	31·1	46·7
Imported Stores:		
From Stores Department or Home Boards of Indian Railways	50·2	29·6
Purchased in India	8·9	18·1
Purchased abroad	0·3	0·3
Total	100·0	100·0

It will be noted that purchases of Indian produce and manufactures increased by 11·4 per cent., that the imports of stores from the India Office and the London Boards of Indian Railways declined by no less than 20·6 per cent., and that, with unrestricted rights of purchase, there was an addition of 9·2 per cent. in the local purchase through merchants and others of imported stores.

Recommendations of the Indian Industrial Commission.—In May, 1916, the Indian Industrial Commission was appointed by the Government of India to examine and report upon the possibilities of further industrial development in India and to submit its recommendations with special reference to the following questions :—

(*a*) whether new openings for the profitable employment of Indian capital in commerce and industry can be indicated; and

(*b*) whether and, if so, in what manner, Government can usefully give direct encouragement to industrial development.

The question of increased local purchases of Government Stores received very careful attention from the Commission, and they definitely recommended the appointment of a Controller-General of Stores in India with an expert purchasing and inspecting organisation. They suggested that all indents should be scrutinised in India by the local Stores officers, that tenders should be called and orders placed for such articles as can be made in the country, and that the balance of the indents should then be submitted to London for placement in the usual manner. As the Commission's recommendations have exercised such an influence on the subsequent course of events and form the basis of Government policy in this connection, I think it will be of interest and value if I quote, in extenso, the relevant passages from the Commission's Report :—

> "It appears to us that, in the interests of Indian industries, a radical change should be made in the methods of purchasing in India Government and railway Stores. The existing system has been handed down from a time when India was almost entirely dependent upon Europe for manufactured goods; but it is unsuited to modern conditions, and has had a deterrent effect on attempts to develop new industries in India. As we have already said, we consider that the prescriptions of the Stores Rules regarding the classes of articles that may be bought in India are suitable, subject to the addition of a provision—which, we understand, is now under consideration—regarding purchases from Indian branches of British manufacturing firms. The organisation which we are proposing will ensure that the fullest use is made of these prescriptions, in view of the progress which has been made, and will be made in the future, in Indian manufactures. Further experience of the

working of an Indian Stores Department may, however, indicate the desirability of modifications.

"The possibility of the local purchase of Stores produced in India, but hitherto obtained in England, depends primarily on the existence of an expert agency in India, which will ensure that the Stores obtained are of suitable quality and price, and we think that the same system should be applied to a large proportion of the articles already purchased in this country. Great economies have already been effected by the Munitions Board through the centralised purchase of local manufactures, especially in the case of textiles; and it is a question for consideration how far the advantages of this system warrant its general adoption. The present system of local purchase by individual officers is in any case wasteful, and requires considerable modifications. Assuming the necessity of some form of centralisation, we have also to consider the advantages of provincial versus Imperial buying and inspection. There are instances where a single province has a monopoly, as Bengal has of jute manufactures, or Bihar and Orissa of steel. There are some cases where the manufacturing equipment of certain provinces is vastly greater than that of others, whose demands are almost equally great. There are other cases where the provincial equipment is more nearly proportionate to provincial needs. Some provinces have local manufactures of tools or machinery, which it is desirable to encourage. If a purely provincial purchase organisation were adopted without any safeguards, provincial departments would be competing against each other with comparatively small orders to fill, and against the Imperial organisation with much larger ones, thereby losing all the advantages of large scale purchase and possible standardisation. On the other hand, the further distant he is from the manufacturer who supplies him, the less are the advantages of purchasing in India to the indenting officer; and it is desirable, within reasonable limits and with due regard to economy, to encourage the industries of a province by the local purchase of provincial requirements. In some cases the middle course might be adopted of arranging for running contracts by a central agency, with local producers for local supply. Manufacturers in Calcutta, Bombay, or Madras, under this arrangement, would quote rates for the delivery of certain classes of goods in certain areas, fixed by agreement with the Controller-General of Stores, and local officers would fill their requirements from these. Such rates might be on a sliding or fixed basis, according to the class of article. In any case, some means of mutual adjustment and of exchanging information regarding local prices and qualities is obviously needed. Moreover, if efficiency, whether in purchase or in inspection, is to be maintained, a certain minimum staff is required, and this staff will not

vary greatly, whether the purchases made be few or many. If it be unduly reduced, adequate expert knowledge will no longer be forthcoming, and local Governments will be accordingly exposed to the risk of being overcharged and of receiving inferior material.

"No decision can be reached regarding the precise organisation which should be employed, or the degree of centralisation which it is desirable to adopt, until the whole question has been examined in detail by a small expert committee, with special reference to each of the leading classes of articles purchased, the extent to which they are produced in the different provinces, and the facilities with which local Departments of Industries can suitably be equipped for inspection and purchase. For the purpose of our financial estimate only, we have found it necessary to assume a system of completely centralised purchase and inspection; but we feel sure that the proposed committee will be able to effect a considerable degree of decentralisation at the outset, and will provide for still further devolution as the organisation develops and a settled policy becomes established.

"Without anticipating the committee's conclusions as to how individual classes of Stores should be treated, our own consideration of the question leads us to the view that the general nature of the future organisation should be on the following lines. There should be an Imperial Department of Stores and provincial agencies which should form part of the provincial Departments of Industries. This would set free individual officers from the responsibility for the local purchase of most classes of Stores, and provide for expert purchase and inspection. The Imperial Department of Stores should have at its head a Controller-General of Stores, with his headquarters at Calcutta; it would purchase and inspect Stores, and deal with indents received from provincial Directors of Industries. In each provincial Department of Industries there should be a Stores branch for the control of which, in the major provinces at any rate, an experienced officer would be required, who should be responsible for local purchases, and should utilise the staff of the Department, as far as possible, for inspecting and testing the goods supplied through him.

"All indents for Stores required by provincial officers should come to the Director of Industries in the first instance. He would examine them and arrange for the local purchase and inspection of those items which could suitably be dealt with in this way. The Director of Industries would receive information, as explained below, from the Controller-General of Stores, which would enable him to form an opinion as to the possibility of obtaining more favourable tenders for such articles from another province, and it might be considered advisable in such cases for him to arrange for purchase and

inspection through the local director of such province. The balance of the indents would be forwarded to the Controller-General of Stores, who would again examine them and issue orders for the purchase of the remaining items which, in his opinion, could be advantageously obtained in India. He would, as we have already indicated, in some cases enter into running contracts, in pursuance of which Directors of Industries would be able to purchase from contracting firms without further reference to him In certain cases it would be best for him to effect purchases himself, whether under running contracts or as isolated transactions, where the articles could not conveniently be dealt with by the provincial agency. Experience of local and Imperial sources of supply would soon show what are the respective capacities of these for meeting orders; and, in practice, no delay would be involved in deciding what items would have to be obtained through the buying agency in England, which must, for some time to come, continue to be the Stores Department of the India Office. All railway indents which are at present sent to the Stores Department of the India Office would be passed through the Controller-General of Stores, who would deal with them in the same way as with other indents. Orders on the firms of any province, whether from another provincial Department of Industries or from the Controller-General of Stores, would ordinarily go through the local Director of Industries, though, where centralised purchase is necessary, it would be in some cases desirable for the Controller-General of Stores to deal with local firms direct. Under this system the manufacturers of each province would be given the opportunity of supplying their own local Governments, so far as they were able to do so, as well as those of other provinces in which similar manufactures have not been established. With the Controller-General of Stores would rest the responsibility of deciding whether indents are to be transmitted to London or local manufacture undertaken. Only in the case of heavy machinery and constructional ironwork is there likely to be any difficulty in coming to a decision. In these cases much depends on the designs and specifications, and very highly specialised experience is required to ensure satisfactory results. This has hitherto been obtained in London through the agency of the consulting engineers employed by the India Office, and a similar technical agency will have to be created in India if full advantage is to be taken of the increasing capacity of the country to turn out heavy work. The annual report of the Controller-General should include a classified statement of the articles obtained in India and abroad and the prices paid.

" Inspection of local purchases would be carried out by the staffs of the local Department of Industries, where they include suitable experts. But the range of Government

requirements is so wide and involves the expenditure of such large sums, that the experts required for the assistance of provincial industries will be quite inadequate to inspect all the articles purchased locally; moreover, to require them to do so would, in some cases, cause delay and interfere with their ordinary work. The urgent necessity of securing economy and efficiency in the expenditure of the vast sums of money spent on the purchase of Government Stores, requires a very efficient and reliable staff of Imperial inspectors, including a varied range of specialists, and we wish to point out that, though this staff may appear at first to be expensive, the cost of its maintenance will be small compared with the risks involved in purchasing stores without expert check. The activities of these officers would form one of the most valuable sources of industrial intelligence, and if, therefore, they are organised by an enlightened departmental head and are exchanged from time to time with officers employed under local Governments in the encouragement of local industries, there is no doubt that the entertainment of this staff will be a real economy, both directly in the saving of money on purchases and indirectly in the development of new industries. We contemplate that an arrangement will grow up of a kind that would prevent undue interference with the provincial directors in the purchase of local products, and that, consequently, while the right to inspect may exist, it will be exercised with judicious discretion and not in officious detail.

" There is always a natural reluctance on the part of local purchasing officers to undertake the responsibility for quality. This feeling has, in fact, been one of the reasons why they have indented on the Stores Department instead of obtaining their requirements in India. We feel sure, therefore, that provincial purchasing officers will welcome the intervention of an Imperial inspecting staff.

" As we have stated above, we consider that one great advantage of the inspecting staff would be the transmission of information from one province to another regarding sources of production and improvements in manufacture, thus enabling each province to learn by the experience of others and facilitating more uniform progress in all parts of India. We propose that the Controller-General of Stores should work in close contact with the Director of Commercial and Industrial Intelligence."

The Stores Purchase Committee, 1919-1920.—The next step forward in the matter was the appointment of the Stores Purchase Committee by Resolution, dated 5th December, 1919, of the Government of India, which reads as follows :—

" The most obvious and direct form of assistance which the Government of India can give to the industries of the country is by the purchase of supplies required for the public

services so far as possible in the country itself. This principle is already clearly expressed in the existing Stores Rules, although their keynote is economy, an essential factor in any scheme for the purchase of Government Stores; but indenting officers have in practice been too often deterred by the risk involved in purchasing in India in the absence of an expert purchasing and inspecting agency. It follows, therefore, that the constitution of a fully equipped Stores agency in this country is a very important item in the policy of industrial improvement on which the Government of India are now embarked.

" 2. The foregoing principles were set forth by the Indian Industrial Commission, accepted by the Government of India, and approved by the Secretary of State; they have already been put into practice to a limited extent under war conditions by the Indian Munitions Board and the time has now come to give them permanent effect. The Government of India have, therefore, with the sanction of the Secretary of State, decided on the appointment of a Committee to work out a detailed scheme.

" 3. There are, however, other factors which must be considered in framing any such scheme. In the first place, the provincial Governments have generally expressed a desire for some measure of freedom in arranging for their own purchases, although they recognise the assistance that the creation of an efficient central purchasing and inspecting department could afford, even to the largest and best equipped provincial Stores Department. Although from the point of view of the producer provincial Governments are not individually very important purchasers in comparison with the large consuming Departments of the Government of India, yet their demands are on a sufficient scale to make the waste of public money, which inevitably attends inexpert purchase and ineffective inspection, run into considerable figures; and this is bound to lead in the long run to dissatisfaction with local sources of supply. It will be for the Committee, in consultation with the officers of local Governments and with private suppliers, to devise a system which will, so far as possible, meet the wishes of local Governments, while securing to the fullest extent practicable the great advantages of centralised purchase, thereby eliminating competition between the different Government agencies, and of an expert and highly specialised inspecting agency, whose advice and assistance will be of no less value to the private manufacturer than to the Government indentor.

" 4. The great railways of India, whether Company or Government lines, are large consumers of Stores, and have, therefore, found it necessary to create their own agencies for holding stocks, and for effecting local purchases, the

latter being often on a very considerable scale. There is, however, at present no agency for ascertaining whether Stores bought through the Director-General of Stores could have been obtained in India; nor do the railways possess any specialised purchasing or inspecting agency for the different classes of articles which they require; but they are able to rely to some extent on the Superintendent of Local Manufactures and on the Test House at Alipore to check samples of articles locally obtained. The usefulness of the institution has been considerable, though limited in direction; and proposals are on foot for establishing another test house in Bombay. The Government of India, who have large financial interests in railways, desire to have before them clear information regarding the probable benefits which railways could expect from the assistance and advice of a fully equipped Stores agency, and as to the lines on which that assistance could be most advantageously afforded. In this connection it will be desirable for the Committee to frame proposals for the future control, duties and equipment of the existing test house and for the provision of additional test houses if necessary.

" 5. The method of providing military Stores is a matter which will be doubtless considered by the Committee, which has been appointed to report on the administration and organisation of the Army in India. This Committee will derive great assistance from the conclusions of an expert body such as that which is being appointed under this Resolution; and the Government of India consider that the most convenient procedure will be for the Indian Stores Committee to proceed with their enquiries on the assumption that the military authorities will require to be provided with Stores purchased in India under much the same conditions as other Departments of the Government of India; but to ascertain from time to time the views of the Committee on the Army in India, and have regard in framing their own proposals, so far as appears to them proper and feasible, to the views of that Committee.

" 6. The Government of India have had under consideration the question of the purchase of food and fodder for the Army. It has, however, been decided not to include this question within the scope of the present enquiry.

" 7. The Government of India have decided to constitute a Committee to enquire into the matters indicated in this Resolution, and to frame a definite and, so far as possible, a detailed scheme for the purchase and inspection of Stores in India. Certain general principles have been, it will be observed, accepted by the Government of India and the Secretary of State. It will not be necessary for the Committee to discuss these further; and they should concentrate their attention on the difficult and complicated task of devis-

ing a scheme which will as far as possible meet the needs of the different interests concerned, while keeping fully in view the fundamental principles of efficiency and economy.

" 8. The Committee will consist of the following gentlemen :—

President:

" 1. Mr. F. D. Couchman, M.I.C.E., Member, Railway Board.

Members:

" 2. Mr. G. H. Collier, C.I.E., Director-General of Stores, India Office, London.

" 3. Mr. F. Palmer, C.I.E., M.I.C.E., M.A.S.C.E., F.R.G.S., late Chief Engineer, Port of London Authority.

" 4. Colonel H. A. K. Jennings, C.I.E., Inspector of Quarter-master-General's Services.

" 5. Lieutenant-Colonel C. C. H. Hogg, C.M.G., R.E., Superintending Engineer and Secretary to the Honourable the Agent to the Governor-General in Rajputana in the Public Works Department.

" 6. Mr. H. N. Heseltine, C.I.E., Accountant-General, Railways (retired).

" 7. Mr. A. W. Dods, of Messrs. Burn and Co., Calcutta.

" 8. Rai Bahadur Lala Milki Ram, Chief Storekeeper, Oudh and Rohilkhand Railway (retired).

" 9. Mr. Lalji Naranji, of Messrs. Lalji Naranji and Co., Managing Agents, the Jupiter General Insurance Co., Ltd., Bombay.

" 10. Mr. J. C. Highet, Assistant Secretary, Railway Board, has been appointed Secretary to the Committee.

" 9. The terms of reference are as follows :—

" In view of the necessity of encouraging Indian industries, while at the same time securing economy and efficiency in the purchase of Government requirements, the Committee should enquire and report :—

" (*a*) what measures are required to enable the Departments of the Government of India and of local Governments to obtain their requirements as far as possible in India, and what central and local agencies for purchase and inspection should be constituted;

" (*b*) what should be the relations of such agencies with one another and with the Stores Department of the India Office, or such other purchasing organisation in England as may hereafter take the place of that Department;

" (*c*) what modifications of the Stores Rules will the scheme, recommended by the Committee, necessitate."

The Committee was a fairly strong one, but it is unfortunate that Mr. Palmer's engagements rendered it impossible for him to join the Committee as originally intended. Mr. Collier

recorded the extent of his agreement with, and divergence from, the majority of the Committee in a separate memorandum appended to the report and signed by himself and by Mr. Ryan, who was appointed to the Committee in substitution for Mr. Heseltine during the course of its enquiries.

I would strongly urge that British firms who have been accustomed in the past to tender for India Office Contracts should carefully study the full report of the Committee, as it affords a valuable insight into the attitude of most Indian officials, industrialists and merchants on this most important subject. In Appendix XVI, page 284, will be found the summary of its conclusions and recommendations, and it has been thought desirable, notwithstanding its length, to give in full, in Appendix XVII, page 289, the joint minority memorandum of Messrs. Collier and Ryan, particularly as the Government of India, subject to one or two modifications of importance which are generally in the direction of allowing greater freedom to local Governments, are provisionally inclined to follow the minority memorandum in many respects where it differs from the view taken by the majority.

Attitude of the Government of India with regard to the Stores Purchase Committee's Report.—The attitude of the Government of India with regard to the proposals of the Committee is clearly laid down in a despatch, dated March 29th, 1921, addressed to Provincial Governments and Administrations and inviting their opinions on the provisional decisions made. An extract from this despatch will be found in Appendix XVIII*, page 299, but the following is a summary of the proposals and suggestions for immediate action :—

SUMMARY OF PROPOSALS; AND SUGGESTIONS FOR IMMEDIATE ACTION.

Location.

(1) Headquarters of Stores organisation to be with the Government of India (Report, paragraphs 152-156).

(2) Head of organisation to be styled Chief Controller of Stores, and to receive a salary of Rs.3,000—100—3,500 (Report, paragraphs 163 and 197).

(3) Committee's proposal to create provincial agencies at Madras, Lahore and Rangoon not supported. Purchasing officers to be appointed at Calcutta and Bombay (one on Rs.1,800 and one on Rs.1,500, at each, and assistants on Rs.1,000 and Rs.750 at Calcutta and Bombay respectively); and possibly a man on Rs.1,500 will be found necessary at Cawnpore (Report, paragraphs 151, 157, 166 and 197).

Intelligence and Price Comparison.

(4) Industrial Intelligence to be provided by purchasing and inspecting staff, Directors of Industries and the Commercial Intelligence Department. It should be compiled by purchasing officers, and Controller of Provincial Agents and Intelligence proposed by Committee is not required. An officer may be needed for miscellaneous intelligence (Report, paragraphs 165 and 197).

* A copy of the Despatch can be seen at the Department of Overseas Trade.

Purchasing Organisation.

(5) Purchasing officers to be controlled by a Director of Contracts and Intelligence on Rs.2,000—100—2,500 (Report, paragraphs 164, 183 and 197).

(6) Possibility of Committee's proposed organisation for timber and sleeper purchase depends on concurrence of company-worked lines. Centralised purchase of timber in Burma might be carried out by Forest Department if above arrangement has to be postponed (Report, paragraphs 168 and 169).

Inspection Arrangements.

(7) Appointment of a Chief Inspector on Rs.2,250—100—2,750 against Rs.3,000 proposed by Committee (Report, paragraphs 173, 183 and 198).

(8) Stores organisation to inspect all purchases by specially exempted Departments (Report, paragraphs 120, 121, 122 and 147).

Powers and Finance of Purchases.

(9) Chief Controller of Stores to have full powers in respect of purchase, subject to obtaining sanction of the Government of India:—

(*a*) to any contract over 16 lakhs in any one year;
(*b*) to purchases in excess of indents;
(*c*) to contracts binding Government to buy more than estimated requirements;
(*d*) where it is proposed to allow a premium over and above market price to encourage indigenous production or to give a bonus on production (the latter of which courses is greatly preferred);
(*e*) to contracts exceeding three years and involving expenditure of over Rs. 1,00,000 in any one year;
(*f*) to write off losses owing to purchase of unsuitable stores;

(10) Indenting departments, including provincial Governments, Indian States and semi-public bodies, to be debited with estimated proportionate cost of purchasing organisation (Report, paragraphs 96, 209 and 210).

(11) Any increase in cost of stores over original estimate to be intimated to the indentor at once (Report, paragraph 202).

(12) Payment should be prompt, and interest may be sometimes paid in case of delay (Report, paragraph 203).

Initiation of Department, Recruiting and Deputation.

(13) Sanction of the Secretary of State to be obtained for the Department to be started by appointment of the Chief Controller, the Chief Inspector and the Director of Contracts and Intelligence (Report, paragraphs 184 and 185). Sanction has been obtained to this proposal.

(14) Other initial recruitments to be made by Chief Controller with the advice of temporary local committee; subsequent regular recruitment to be through Public Services Commission (Report, paragraphs 195-199).

(15) Officers should be deputed from London Stores Department to Stores Department in India and *vice versa;* and officers might be occasionally deputed to Stores Department in India from the main consuming Departments (Report, paragraphs 198 and 199).

Liability of Government Departments to purchase through Stores Agency and Methods of Purchase.

(16) It will be optional for local Governments, company-worked railways, semi-public bodies and Indian States to obtain their requirements through the Stores Department. All Departments of the Government of India must obtain from the Stores

Department such stores as are not specially excepted from its operations; provided that certain technical Departments may make their own local purchases of specialised engineering plant and machinery. The Medical Department should follow existing arrangements (Report, paragraphs 92, 95, 147, 149 and 188).

(17) Coal, stationery, and ordinary local materials such as sand, lime, bricks, jungle timber, to be excepted from the scope of the Stores Department (Report, paragraphs 147 and 148).

(18) Demands from numerous indentors for same class of material or article should, when possible, be combined into a running contract (Report, paragraph 189).

(19) Requirements included in annual indents should be notified to the Chief Controller of Stores in the case of all articles included in headings (i) to (iii) of paragraph 188 of the Committee's Report, and of certain classes of iron and steel by all Departments; and of all articles by the Army, except the Ordnance Factories and Military Works Service. When such articles are included in running contracts, indenting officers should purchase direct under such contracts. Purchases under supplementary indents should be made (*a*) in the case of a running contract by the indentor under that contract; (*b*) in other cases by the indentor, if within his financial powers; if not, by the Chief Controller of Stores (Report, paragraphs 147 (*c*) and 189).

(20) Duplicate copies of indents on the London Stores Department should be sent to the Chief Controller of Stores, who will inform indentors for future guidance when articles so included can be obtained of indigenous manufacture. This procedure would not apply to indents for lethal weapons and ammunition. (Paragraphs 18, 19 and 22 of Messrs. Collier and Ryan's memorandum.)

(21) Stock depots not recommended (Report, paragraphs 17-21).

Special Methods of Encouragement to Indigenous Production.

(22) Firms may be given guaranteed orders in certain cases (Report, paragraph 101 (*a*)).

(23) In certain cases of local manufacture, contracts should include clause permitting variations in price to meet changes in wage rates and cost of materials (Report, paragraph 107).

(24) Committee's recommendations to meet losses to Indian manufacturers caused by rise in exchange postponed for consideration when conditions are more settled and more definite information is available (Report, paragraphs 105-106).

(25) Manufacture of articles which can be purchased from private producers should not be carried out in Government factories, unless special military considerations exist, or unless special reasons exist, which must be reported to the Government of India; and Stores Department should watch to what extent this provision is complied with (Report, paragraphs 76-90).

(26) Where purchases are made at rates above normal to benefit an industry or where bonuses are given, extra cost should be borne by general revenues of Government. See also item 9 (*d*) above (Report, paragraph 103).

Purchase of Imported Stores.

(27) Local purchase of imported stores should not be permitted as a general rule; and Stores Rules should contain certain restrictions on this practice. Working of this principle should, however, be watched by the Chief Controller of Stores. (Paragraphs 6-15 of Messrs. Collier and Ryan's memorandum).

(28) Purchases of imported stores may be made from branches of manufacturing firms under certain conditions. (Paragraph 12 of Messrs. Collier and Ryan's memorandum.)

Powers of Local Governments in Respect of Stores Purchase.

(29) Purchases of Stores required for Imperial Departments should be a central subject. Stores may be obtained by reserved or transferred Departments either from the central Stores Agency or through agencies created by themselves, provided that in the former case such purchases must be subject to the Stores Rules and to such other rules as may be made for the guidance of the Central Stores Department; and, in the case of purchases made from the United Kingdom, to such rules as may be made from time to time by the Secretary of State, the Government of India or the Director-General of Stores.

(30) Local Governments should be permitted to purchase imported Stores except that, in the case of Stores ordered from the United Kingdom, they should be indented for through the London Stores Department (Report, paragraphs 91-96 and 221).

Position of London Stores Department.

(31) The London Stores Department should be independent of the Stores Department in India, and should be controlled by the Government of India through the High Commissioner. Articles manufactured in other countries than the United Kingdom should be purchased through the London Stores Department, except where their purchase in India is permitted under the Stores Rules. The London Stores Department should continue to transmit Stores obtained from military and naval organisations of the British Government (Report, paragraphs 44, 45, 114 and 115, and paragraphs 14, 15, 23 and 26-30 of Messrs. Collier and Ryan's memorandum).

Perhaps the two most important questions from the point of view of the British supplier of Stores to India are those dealt with under the headings (1) Special Methods of Encouragement to indigenous production and (2) the Purchase of Imported Stores.

(1) **Special Methods of Encouragement to indigenous production.**

(a) *Guaranteed Orders.*—The Committee suggested that Government, particularly in the case of new enterprises, which require a definite prospect of a steady demand for the goods to be produced, might pledge itself to buy a definite quantity of the goods throughout a considerable future period, subject to reasonable conditions as to price and quality.

The Government of India agree that firms may be given guaranteed orders in certain cases.

(b) *Preferential Rates.*—The Committee consider that the placing of orders in India at specially favourable rates might be peculiarly applicable to those cases where—until experience has been gained by the managing staff and technical skill by the workpeople—the firm cannot hope at the outset to produce goods at a price that will compete with overseas manufacturers. They propose that the additional cost involved should not usually fall on the consumer but be allocated to a special head from which grants should be made by the Imperial or local Governments as the case may be.

The Government of India wisely reply that " the working of the Stores Department, whether imperial or provincial, should be

governed strictly by business standards both as regards price and quality, and any departure from these standards may lead, not only to extravagance or possible competition, but to the grant of support to a provincial manufacture to the detriment of a similar industry in an adjoining province." They add that "Any form of protection that can be given haphazard or which absolutely prevents outside competition, is not likely to do permanent good to the industries of the country. The Government of India feel that the question of the encouragement, by either of the above methods, of local industries is fraught with serious difficulties and dangers and should not in any case be undertaken without the most careful consideration."

(c) *Favourable Railway Rates.*—The Committee point out that, in view of the great distances in India, the cost of inland transport frequently has a considerable effect on the comparison of price between indigenous and imported articles, and they understand that, in the past, the policy of quoting favourable rates to and from the major ports has, on occasion, resulted in a direct advantage to foreign goods to the disadvantage of Indian manufacturers.

To this Government reply that they are giving separate consideration to the question of railway rates.

(d) *Exchange Compensation.*—The Committee raise at some length the unfavourable effect on existing industries in India of the great rise in exchange in 1919-1920. They state that when the rupee was practically stabilised at 1*s.* 4*d.*, Indian manufacturers generally asked for a fair field and no favour, and were willing to supply Government with such Stores as they manufactured in competition with imported Stores and on equal terms. They feel, however, that the altered value of the rupee introduces a factor which, in some cases, renders it practically impossible for them to hope to compete with foreign manufacturers, and which, therefore, must involve them in serious losses unless Government can adopt some measure of protection. They, therefore, recommend the adoption of a conventional rate of exchange in effecting comparisons between prices quoted for indigenous and imported goods of the same class.

The Government of India do not consider that any sufficient proof of inability on the part of Indian manufacturers to compete at the recently high exchange rates has been adduced by the Committee; nor has a sufficient degree of stability been reached in respect either of the exchange rate, as is shown by the recent fall, or of the cost of manufacture and transport in England and India, to enable the position to be estimated with any certainty. They will, however, watch carefully the effect of the above conditions on the prosperity of Indian manufacturers.

(e) *Fiscal Protection.*—The Committee hold that the question of protection of Indian industries as a means of maintaining those already established and of encouraging the extension of others is a matter which urgently demands attention. They

therefore recommend the revision of the fiscal policy of Government with a view to the protection of local industries.

The Government of India do not give any specific reply to this recommendation, but it is understood that the whole question of the future fiscal policy of India will be considered by the Indian Fiscal Commission, shortly to be appointed, which will carry out its investigations this next cold weather, and it would be obviously premature to make any remarks on this question until the findings of the Commission are known.

(2) **The Purchase of Imported Stores.**

The majority of the Committee arrive at the following conclusion :—

> "The purchase of such Stores as are not procurable of local manufacture is, at present, regulated artificially by rules, the effect of which is practically to prevent, in ordinary cases, such Stores being purchased in India from dealers or others. We agree that the time has come when such artificial restrictions should be abolished, and that it should be open to officers responsible for the purchase of imported Stores to take advantage of the cheapest available market in which suitable articles can be obtained, having due regard to the convenience of rapid supply and other special advantages The several channels through which these Stores might be purchased should thus be free to compete with each other on their merits. We anticipate that, in practice, it will be found advantageous to procure certain classes of imported Stores considerably more freely than hitherto through the agency of branches, agents and dealers in India. The demands placed on London will thus be reduced in two distinct ways :—
>
> (*a*) By the interception of demands for imported Stores for which articles of Indian manufacture can be substituted, and
>
> (*b*) By the increasing purchase of imported Stores in India instead of in the United Kingdom."

Messrs. Collier and Ryan, in their joint memorandum, find themselves completely at variance with their colleagues on this question and express themselves very clearly and forcibly in the following terms :—

> "The proposals of our colleagues involve the entire remodelling of the Stores Rules, the prescriptions of which the Industrial Commission considered to be suitable, subject to the addition of a provision regarding purchases from Indian branches of British manufacturing firms. We do not believe that the radical changes in those rules which are recommended by our colleagues are needed to secure the objects aimed at by the Industrial Commission, namely, the establishment of an expert purchasing and inspecting organisation in India for procuring supplies required for the public service, and for preventing demands being sent to England

which might be satisfactorily met by articles of Indian manufacture. We go further and are strongly of opinion that to invest the head of the new Stores Department in India, as proposed by our colleagues, with power to purchase through his subordinates imported Stores from merchants or middlemen at his discretion, would certainly not be productive of economy, might be liable to serious abuse, and would lead to a great increase in work and delay in dealing with demands. At best it could hardly fail that vain endeavours would be made to obtain quotations in India for imported Stores which it would be found, after all, could be obtained more cheaply and probably of better quality through the Home agency. We therefore consider that, unless demands for imported Stores can be satisfactorily met by the substitution of articles of local manufacture, or by purchase from Indian branches of British manufacturing firms, or otherwise subject to the prescriptions of the amended Stores Rules which we recommend (*see* page 294), the demand should at once be passed to the Home agency for compliance."

The observations of the Government of India on this subject are as follows :—

" The purchase of imported Stores is a matter on which the members of the Committee have exhibited a considerable divergence of opinion. The proposals of the Government of India regarding the allocation of functions to the departments of local Governments have, however, eliminated almost entirely, it is hoped, the causes of variance, so far as the departments of local Governments are concerned. Local Governments will have a free hand to purchase all kinds of Stores either through the central Stores Department or through their own agency. The operations of the central Stores Department should, the Government of India think, be governed in this respect by existing rules with the few relaxations that are proposed by them or by the Committee. These provisions have in the past operated generally in the direction of economy. The Government of India are well aware of the difficulties which these provisions entail; but they trust that the relaxations proposed by them have removed the most serious objections; and it will be open to local Governments, if they prefer a less restricted though possibly less economical method of purchase, to set up their own agencies. *With regard to the main principle of the purchase of imported Stores, the Government of India find themselves in general agreement with the minority proposals, and propose to follow them, so far as their own purchases are concerned, for the following reasons. Too free local purchase of imported Stores will tend to discourage the replacement of imports by local manufactures and to strengthen the existing vested interests which have preferred in the past an easy profit from the sale of imports to risking*

their money in attempts to produce locally. The Government of India also think it probable that the free local purchase of imported stores will not be in the interests of economy. This question has in the past been the subject of much dispute, which can only be settled effectively with the help of a local agency for purchase and inspection. The practical experience of such an agency will enable the Government of India and local Governments to decide to what extent and in what cases the local purchase of imported stores is advisable."

In view of the desirability of British manufacturers making themselves thoroughly conversant with the new conditions, I give *in extenso* in Appendix XIX the proposed rules for the supply of articles for the public service. In Appendix XX, page 310, will be found a despatch from the Government of India, dated March 29th, 1921, addressed to local Governments and Administrations setting out the reasons for the modifications in the Stores Rules here suggested. The most important of these rules from the point of view of the British manufacturer and exporter is Rule 3. It will be observed that British manufactured goods may be purchased locally in India for the use of the public service in three cases :—

(a) *When the articles are already in India at the time of order or are already on their way out, and their price and quality are not unfavourable as compared with those at which similar articles could be obtained from the Stores Department, London, and the cost of the supply does not exceed the limits prescribed in Rule II. When the total value of the articles required is trifling, it is generally desirable to purchase them locally.*

It is hoped that this Rule will give an incentive to British manufacturers of such articles as apparel, boots and shoes, chemicals, drugs and medicines, hardware and cutlery, instruments and apparatus, paper and stationery, textiles, engineering supplies and tools, etc., etc., to keep regular stocks of their productions in the hands either of their own branches or direct representatives in India or in the possession of accredited agents or merchants. They would then be in a position to satisfy purchasing officers of their ability to supply goods from stock when required and would thereby have a great advantage over their competitors.

(b) *In the case of important construction works let out on contract, articles not manufactured in India required for the construction of such works may be supplied by the contracting firm subject to the following conditions :—*

(1) *That the firm is approved by the Government of India and is included in the list of firms so*

approved. A list of firms which have been approved up-to-date is given. (*See* Appendix XIX, p. 308.)

(2) *That the materials are subject to the current specifications and tests prescribed by the Government of India.*

The branches in India of British manufacturing firms who are in a position to undertake important construction works on contract should see that their names are duly included on the official list of approved firms. Other British firms, who have hitherto relied on securing their Indian Government Contracts solely through the medium of the London Stores Department would be well-advised to consider the desirability of establishing branches in India and so avoid being forestalled by their competitors who have already done so.

(c) *Plant and machinery and component parts thereof may be purchased from branches* established in India of British manufacturing firms borne on the list of the Stores Department, London, and approved by the Chief Controller of Stores, India, provided that the following conditions are observed* :—

(1) *That the purchase is made by the Chief Controller of Stores, India, or by a highly qualified engineer directly responsible to the Government of India for the order so placed.*

(2) *That the plant and machinery are of standard patterns such as are ordinarily manufactured by the firm; and have actually been so manufactured.*

(3) *That the branch firm entertains a staff of expert mechanics capable when so required of erecting and repairing the plant and machinery which it supplies.*

(4) *That the actual price of the articles (exclusive of any expenditure representing cost of erection) is as low as that at which articles of the same make can be supplied by the Stores Department, London.*

(5) *That the cost of supply under any one order or detailed estimate, in respect of any one type of standard plant or machinery does not exceed Rs.* 50,000.

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* It is important to note that branches may be held to cover approved technical agents of British manufacturers who do not merely act as selling agents but are also in a position to render the same kind of technical assistance in India as actual branches of the firms.

(6) *That when test or inspection of the plant or machinery during manufacture or before shipment is necessary or desirable arrangements should be made for such test and inspection to be carried out by the Stores Department, London.*

This is the most important of all the modifications proposed in the existing Stores Rules. Many of the leading British engineering firms have maintained branches in India for years, staffed with qualified engineers and commercial men, and employing a trained staff of mechanics for erection purposes. They have been remarkably successful in the industrial field, but have hitherto been handicapped in quoting for Government orders owing to the rules which laid down that orders must be placed by the Stores Department in London. Fortunately, they seem likely at last to come into their own and it is hoped that they will take the fullest advantage of the opportunity. Other British makers of plant and machinery who have hitherto relied on securing their Indian Government indents through the medium of the India Office and who have not thought it worth while to establish their own organisation in India will do well to review the situation. If they do not feel warranted in going to the expense of a large organisation of their own in this country, there is now the alternative offered of appointing one of the few large firms of machinery merchants in India as their technical agents. The number of such firms who are in a position to render the same kind of technical assistance as an actual manufacturer's branch is not great, but there are a few of them and their names and position can be ascertained from the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1.

Position of Local Governments.—It will be observed that in the case of purchases made by local Governments, none of the proposed rules apply. The intention of the Government of India is that all departments of local Governments whether reserved or transferred, should be able to make their purchases either through agencies set up by themselves, irrespective of any limitations or quality or price, or through the Central Stores Department, in which case purchases will be subject to the limitations which are outlined above. The only restrictions that the Government of India propose on the purchase of imported stores by local Governments is that, if ordered from the United Kingdom, they must be obtained through the London Stores Department.

A reference to Appendices XIV and XV will show that the importations of stores on account of local Government is relatively small, 11·6 per cent. of the total imports during the years 1910-11 to 1913-14. The great importing Departments in India are the State-worked Railways, the Army Departments, Posts and Telegraphs, Printing, Stationery and Stamps, etc., all of which will fall within the scope of the new organisation.

It is hoped that the new Indian Stores Department, when fully organised, will be so efficiently managed and economical in working that local Governments will find it desirable to make use of the facilities offered by it instead of employing their own agencies.

In conclusion, I would add that while the above decisions have been arrived at and the Amended Stores Rules drawn up by the Government of India, they must not be taken to be in absolutely final form. The opinions of the local Governments have not yet been obtained and final sanction for them has not yet been granted. In order to avoid delay, the sanction of the Secretary of State has been obtained for the appointment on a temporary basis of the chief departmental officers proposed by the Committee, viz., the heads of the department and of the purchasing and inspection branches. These three officers when appointed will be able at once to work out details of organisation, recruitment and accommodation. There is bound to be considerable delay in the inauguration of the new Indian Stores Department, and it is difficult to see how it will be possible for it to be in full working order in less than from one to two years.

CHAPTER VI.

TRANSPORT AND COMMUNICATIONS IN INDIA.

RAILWAYS.

General Position at March 31st, 1921.—In his Budget speech for the year 1921/22 the Hon. the Finance Member referred to the railway position in the following terms :—

> " We expect the net receipts from railways in 1920/21 to be some 7½ crores less than the amount estimated. We naturally framed our budget on the supposition that the goods and passenger traffic would be such as one might expect if agricultural conditions were normal. In spite of the poor monsoon, our estimate of 84 crores for gross traffic receipts is not likely to prove very wide of the mark, for we now expect to get 82 crores. It is the working expenses of railways, which have been increasing month by month, that have been mainly responsible for falsifying our estimate of net receipts; the bulk of this increase is due to increases of pay given to the railway staffs."

Mr. Hailey's estimates for the coming year 1921/22 were 87 crores for gross traffic receipts and nearly 60 crores for working expenses (inclusive of payment of surplus profits). The nett receipts are forecasted to be about 27 crores as against 26 expected in 1920-21 and 31½ actually received in 1919-20. He states " it is probably no news to the House that the net income

from railways, after allowing for interest charges, has recently, in spite of a steady increase in gross traffic receipts, been decreasing. In the year before the war, the nett profit to the State, after defraying all interest charges and paying to the managing companies their share of the surplus profits, came to 7·19 crores. During the war, working expenses were abnormally low, mainly owing to the fact that material for replacements and renewals could not be obtained from abroad. In 1916-17 therefore, the nett profit rose to 11·22 crores and in 1917-18 and 1918-19 to 14·87 and 15·85 crores respectively. With the return of more normal conditions, the profit has considerably decreased; in 1919-20 it fell to 9·35 crores, and in 1920-21 it will probably be no more than 5·08 crores. On the basis of our estimates for 1921-22, and assuming that no change be made in the rates, the profit would be only 4·09 crores. I submit, therefore, that quite apart from our present financial necessities, a moderate increase of rates, particularly on goods traffic, the rates of which are mostly on a pre-war basis, could be amply justified on business grounds. It is not possible, however, to readjust the various rates in time enough to give us the money we need during the next financial year. In the case of goods rates, it is a particularly cumbrous business, and requires very careful consideration in consultation with our traffic experts and with the railway companies. We have asked the Railway Board to examine the matter carefully during the course of next year in order to see what enhancements of rates are possible. Meanwhile, as a temporary measure, we propose to make a substantial increase in the surcharge on goods traffic which was imposed in 1917. The existing rates are one pie per maund on coal, coke, and firewood, and two pies on all other goods. We propose to substitute the following rates :—

" (1) Six pies per maund on coal, coke, firewood, food grains and fodder; (2) two annas per maund on certain valuable commodities which can bear a high rate of tax, such as piece-goods, pressed cotton, jute and ironware, timber and oils; (3) one anna per maund on all other articles of general merchandise not falling within those two categories. At present there is a free zone for goods carried ten miles or less, which we propose to extend to twenty miles.

" The existing surcharge is small and is probably not felt appreciably by the traffic. I fully recognise that any substantial increase must have a somewhat uneven incidence, as the surcharge has no reference to length of journey and its effect is practically the same as a terminal tax. The increase now proposed is therefore intended to be in temporary substitution for a general increase of goods rates. In the event of it being found possible before the end of the year to raise the latter to the necessary extent, such increases will be substituted next year for part or whole of the additional surcharge now to be imposed. We anticipate that the additional revenue so obtained will amount to approximately 5½ crores."

Passing now to the proposals for expenditure in the coming financial year 1921-22, the Finance Member stated " We have not felt justified in making provision for a railway capital programme larger than 15 crores, as against the 22½ crores programme budgeted for in the current year. Indeed, we have felt some hesitation as to whether we could justly find even this figure, but anything less than this will so restrict the provision of necessary renewals, and of new rolling stock, as to react very seriously upon the carrying capacity of our railways. I am fully aware that in many circles this provision will be regarded as inadequate. I realise also that it would be a penny-wise and pound-foolish policy to kill the goose that lays for the tax-payer so many golden eggs. Nevertheless, in the opinion of Government, great as are the interests concerned in a progressive railway policy, the interests of the country as a whole are greater, and in the long run it will be to the latter's interests, and, indeed, to those of the railways themselves, that we should first clear the way by putting our finances in such a position that they will in future be able to bear the burden of larger capital expenditure in various directions of development, of which railway development is no doubt the most important. Otherwise, our credit will continue to depreciate, and we shall be able to borrow less and less. Further, I would suggest to this House that, as guardians of the taxpayers' interests, they cannot altogether overlook the fact that the net receipts from railways, excluding interest charges, amount at present to just under five per cent. of the total capital at charge. I do not wish to stress this point unduly; the best way of improving our railway dividend is (apart from raising fares and rates) to increase the railways' carrying capacity, and that cannot be done without an adequate supply of capital. My point is that, until we free ourselves of the various financial embarrassments which I have mentioned, and thereby improve our credit, it is hopeless for us to expect to raise money except at a rate higher than that which the railways at present earn on their capital. As the House is aware, various schemes for enabling more money to be found for railways have been suggested in the evidence taken by Sir William Acworth's Committee, such as raising by the railway companies, or by some Indian domiciled companies founded to take their place, special railway debentures. We shall of course consider very carefully any recommendations that the Railway Committee may submit to us, and should any such schemes mature, no one will be more pleased than myself, but, so far as next year is concerned, I am afraid that we can only rely on the funds that Government itself can make available from its own borrowing.

" Meanwhile, I must invite the House's special attention to the fact that the difference between the railway capital grant for the current year, namely, 22½ crores, and the 15 crores which we propose to fix for the coming year, is not so great as the figures might imply. This time last year, as honourable mem-

bers know, we anticipated that exchange would remain above 2*s*., and that consequently the financing of a capital grant of £22,500,000 would require a rupee expenditure of only 19 crores. For next year we are, as I have mentioned, assuming an average rate of exchange of 1*s*. 8*d*. This will mean that, to finance a capital programme of £15,000,000, a rupee expenditure of 17 crores 80 lakhs will be necessary, so that, so far as actual expenditure of rupees is concerned, the difference between the two years is only just over a crore."

In Appendix XXI, page 313, will be found a memorandum abstracted from the Railway Administration Report for 1919-20, on the relation of Government to Railways in India. This sets out clearly the diversity of conditions that prevails in the relation of the State to the various lines in respect of ownership and control.

In Appendix XXII, inset after page 319, is given a diagram, also taken from the last Administration Report, showing for each year from 1853 to 1919-20 the total capital outlay, gross earnings, working expenses and length in miles open; also percentage of nett earnings on capital outlay and percentage of working expenses to gross earnings. This throws into strong relief the enormous rise in the working expenses as compared with gross earnings during the past two years. The Railway Board state in their report that this is partly due to the fact that the conditions of service of railway servants were improved by material increases in the scales of wages and salaries; and partly due to the very high prices demanded for materials, essential both for maintenance purposes and for raising the standard of efficiency that had been relaxed during the years of war. They add "This process of improvement necessarily tends to increase working expenses, and it will no doubt take time to reduce such costs to normal proportions, owing to the amount of lost ground that has to be recovered and to the fact that the available supplies of railway material throughout the world are not at present (Spring, 1920) equal to the demand."

Rolling Stock and Materials.—The imports of British rolling stock and materials are on such a large scale that it will probably be of interest to manufacturers to have some account of the present position. According to the Administration Report for 1919-20, large orders for new stock were placed at the conclusion of the Armistice, but principally owing to labour difficulties in the United Kingdom, delivery of a considerable proportion of these orders was seriously delayed. Three hundred and sixty-four additional engines were on order during 1919-20 of which 43 were placed on the line, leaving a balance of 321 to be completed. As regards goods stock, 14,157 additional vehicles were on order in 1919-20, of which 3,653 were placed upon the line, the balance being carried forward for delivery during 1920-21. The figures for coaching stock are more modest. Out of a total of 699 additional vehicles on order 69 were placed on the line,

leaving a balance of 630 to be delivered in 1920-21. It is a pity that the Railway Report for 1920-21 is not yet available, but reference to the import statistics shows that the following values were imported for account of Company-worked Railways in 1920-21. Particulars regarding the number of vehicles are not given.

Description.	1920-21. £	April, 1921. £
Carriages and wagons and parts thereof	6,544,313	1,015,537
Locomotive engines and tenders and parts thereof	4,332,079	991,612
Bridgework	230,127	58,198
Rails, chairs and fish-plates of steel or iron	1,290,737	246,591
Sleepers and keys of steel or iron ...	776,231	118,367
Sleepers of wood	480,905	21,380
Other kinds	476,103	84,761
Total value of railway plant imported	14,130,495	2,536,446

The shipments to India on account of the State-worked Railways during the same periods were valued as follows :—

Description.	1920-21. £	April, 1921. £
Carriages and wagons and parts thereof...	1,003,319	100,147
Locomotive engines and tenders and parts thereof	1,219,788	31,916
Rails and fishplates of steel or iron... ...	56,551	—
Other sorts	12,495	1,676
Total Imports on State Account ...	2,292,153	133,739

Practically the whole of these enormous shipments were obtained from British makers, having been purchased, in the case of the State Railways, by the India Office Stores Department and, in the case of the Company-worked lines, by their London Offices and Consulting Engineers.

In Appendix XXIII, pages 320-1, will be found a most interesting table, compiled by the Railway Board, showing the value of Stores purchased by the principal railways during the financial year 1919-20 and distinguishing :—

(*a*) The value of Stores imported direct.
(*b*) The value of imported Stores purchased in India, and
(*c*) The value of Indian manufacture or of indigenous origin.

The respective totals were £11,476,300; £3,918,900 and £8,302,600 at R. = 2*s*.

A further table, compiled by the Railway Board, showing the number of, outlay on and work done by the rolling stock on each Indian railway during the year 1919-20, may be seen on application to the Department of Overseas Trade.

Locally-made Rolling Stock.—The capacity of the Indian wagon shops is still small and the work very largely consists of assembling imported wheels and axles, bogies, steel sheets and sections. When steel plates and sheets are available from the new plate and sheet mill at the Tata Steel Works, this may give some fillip to local production. At the beginning of 1919, there were still 2,000 broad gauge covered goods wagons to be completed out of those previously ordered for construction in India. Of these 1,000 were delivered in 1919-20 leaving the balance to be delivered in 1920-21. Arrangements were also made for the erection in private workshops of 5,000 wagons received from the United States, which were built for the Russian Railways, but which were subsequently transferred to India. This, the first large American consignment of rolling stock to India, has given a very great deal of trouble. The gauge had to be altered and the delays and worries in connection with the shipment were such that this war-time expedient is not likely to be repeated in normal times. Of these 5,000 wagons, 900 are to be covered goods wagons with wooden bodies (of which 230 were completed in 1919-20). The remaining 4,100 are to be high-sided open wagons for the coal traffic. The erection of these has been pushed forward as the requisite steel sheets arrived in India.

Shortage of Rolling Stock.—In spite of the comparatively large programmes of the past two years, the railways are all suffering from the effects of the war in the form of depreciation of all their works and plant, and the shortage of rolling stock is still acute, particularly for the purpose of coal transport. In his evidence before the Railway Committee this winter, the Agent of the Great Indian Peninsula Railway stated that a capital expenditure of 40 crores of rupees would be necessary to restore his railway to its pre-war state of efficiency and to provide for normal development. A similar state of affairs exists on practically every line, with the result that very great damage has been done to Indian trade owing, in some cases, to the impossibility of securing wagons to move a given crop during the export season. It has already been stated that the railway capital programme for 1921-22 is 15 crores of rupees as compared with 22½ crores last year. On the question of the utilisation of private capital in the United Kingdom and India to meet the needs of the Railways, the Committee arrived at divergent conclusions; one half of the members considering that all future capital should be raised directly by the Central Government, the other, while agreeing that much capital must be raised in this way, believing that no other means of raising the capital should be neglected.

Maintenance of Rolling Stock.—The Railway Board state in the last Administration Report that, during the war, workshop facilities for repairs of rolling stock gradually deteriorated in efficiency as well as being hampered by the amount of war work undertaken over and above the ordinary work of each railway. The beginning of 1919 found the railways struggling with weakened facilities against heavy arrears and a large programme for

the erection of new stock. Considerable improvement took place during the year, but it will take some time to restore old rolling stock to the pre-war standard. In the meantime, the improvement of rolling stock and repair facilities is being given a foremost place in the railway programmes. A reference to Appendix XXIII, page 320, shows that the purchases in 1919-20 from all sources of workshops machinery and heavy tools amounted to £227,400, while the purchases of engineers' plant, excluding petty tools, were valued at £57,600.

New Construction.—As may be expected, the amount of new construction has decreased considerably during and since the war. At the end of 1913-14 the mileage of lines open was 34,656, while at the end of 1919-20 it was 36,735.

The annual capital outlay on new construction fell to a very low level during the war, but afterwards rose steadily till it reached and surpassed the pre-war amount. The Budget Estimates for 1920-21 were the highest since 1909-10, but the greater part was devoted to rolling-stock, whilst that for the construction of new lines did not exceed the 1913-14 amounts.

The total mileage under construction, or sanctioned for construction, on March 31st, 1920, was :—

—	5′ 6″ gauge.	3′ 3⅜″ gauge.	2′ 6″ gauge.	2′ 0″ gauge.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
State lines worked by the State	185·00	—	22·00	—	207·00
State lines worked by Companies.	480·40	117·37	8·43	—	606·20
Branch line Companies' railways under guarantee terms, worked by the Branch line Companies.	—	—	27·00	—	27·00
Branch line Companies' railways under guarantee terms, worked by the main line.	—	23·30	—	—	23·30
Branch line Companies' railways under rebate terms, worked by the main line.	—	—	92·94	—	92·94
District Board lines	—	68·57	—	—	68·57
Indian State lines worked by Indian States.	—	442·20	46·09	56·88	545·17
Indian State lines worked by the main line.	—	153·81	98·45	—	252·26
Total	665·40	805·25	294·91	56·88	1,822·44

The Railway Committee.—On the 9th October, 1920, the Government of India announced that they had decided to appoint a Committee to consider, and advise Government on, certain matters connected with the administration of railways in India. The terms of reference, which were framed in consultation with the Secretary of State for India, were as follows :—

(1) To consider, as regards railways owned by the State, the relative advantages, financial and administrative, in the special circumstances of India, of the following methods of management :—

(*a*) direct State management;
(*b*) management through company domiciled in England and with a board sitting in London;
(*c*) management through company domiciled in India and with a board sitting in India;
(*d*) management through a combination of (*b*) and (*c*);

and advise as to the policy to be adopted as and when the existing contracts with the several railway companies can be determined. (In considering the question of the East Indian Railway, the Committee will take note of the decision to remove the management of that railway to India, which was arrived at when the contract with the present company was extended on the amended terms in 1919.)

(2) To examine the functions, status and constitution of the Railway Board, and the system of control exercised by the Government of India over the Railway Administration, and to recommend such modifications, if any, as are necessary for the adequate disposal of the railway business of the Government.

(3) To consider arrangements for the financing of railways in India, and in particular the feasibility of the greater utilisation of private enterprise and capital in the construction of new lines.

(4) To report whether the present system of control by Government of rates and fares and the machinery for deciding disputes between railways and traders are satisfactory, and, if not, to advise what modifications are desirable.

(5) To make recommendations that may seem germane to the enquiry.

Sir William Acworth, the eminent railway economist and expert, was appointed Chairman, and the members included some of the most experienced railway officials who had been in India, a couple of business men, an Indian politician, the former Chief of the New Zealand Railways, and a finance expert from the City of London. After taking evidence in London, the Commission toured India in January-February-March of 1921 and returned to London to hear final evidence and draw up the report.* Commercial India is now waiting anxiously for the Committee's views, as it is realised on all hands that the shortage of coal and the present deterioration of railway services are two of the most deterrent factors to an early recovery in trade.

* A Summary of this Report has since been received and is given in Appendix XXIX.

The main results of the working of all Indian Railways treated as one system.—In Appendix XXIV, page 324, is given a summary table, taken from the last Administration Report, showing most of the salient facts in connection with the working of Indian Railways as a whole. It will be observed that the percentage of net earnings on the total capital outlay, including ferries and suspense, on all open lines was as follows :—

1915–16.	1916–17.	1917–18.	1918–19.	1919–20.
Per cent. 5·99	Per cent. 6·96	Per cent. 7·75	Per cent. 8·09	Per cent. 6·80

Railway extension in India in the future must be very great once the present difficulty in securing capital is removed and the effects of the war are obliterated. The country is urgently needing more railways for its economic development, and the present mileage of 36,735 is totally inadequate for the requirements of the country. This should mean a steady business for British manufacturers of rolling stock and materials for construction. Indian Railways are all constructed and maintained on British standards and practice and our manufacturers should be able to maintain their present predominant position if only they can keep their prices at competitive levels.

Shipping.

Foreign Trade.—The following particulars are mainly obtained from the Review of the Trade of India, 1919-20. The year 1919-20 witnessed a considerable easing in the freight situation after the tonnage congestion during the war, and there was an increase of 23 per cent. in the tonnage of shipping engaged in foreign sea-borne trade. The following statement shows the clearances of vessels (nett register tonnage) with cargoes and in ballast, engaged in overseas trade :—

——	1913–14 (pre-war year).		1918–19.		1919–20.	
	Tons (1,000).	Per cent.	Tons (1,000).	Per cent.	Tons (1,000).	Per cent.
British ships (including British Indian).	6,679	(76)	3,668	(69)	5,435	(84)
Foreign ships ...	2,083	(24)	1,617	(31)	1,067	(16)
Total ...	8,762	(100)	5,285	(100)	6,502	(100)

It is satisfactory to notice that the share of the United Kingdom increased to 84 per cent. of the total and 8 per cent. above her pre-war share. The following table shows the nationality of vessels (excluding native craft) which entered and cleared at

ports in British India in 1919-20 as compared with the preceding year and the pre-war year :—

——	1913–14 (pre-war year).	1918–19.	1919–20.
	Number of vessels.	Number of vessels.	Number of vessels.
British	4,951	3,974	4,341
British Indian	503	502	542
Foreign—			
Japanese	191	626	406
Norwegian	80	149	104
American	—	52	89
Italian	73	90	85
Dutch	131	157	72
French	60	40	38
Swedish	13	34	30
Chinese	—	142	20
Russian	44	41	18
Greek	26	43	15
Spanish	—	20	12
German	559	—	—
Austro-Hungarian ...	285	—	—
Other nationalities ...	4	35	25
Total foreign ...	1,466	1,429	914

There was a considerable decline in the number of Japanese and Norwegian vessels engaged in the trade, but American ships continued to increase in number with the extension of services to both the Atlantic and Pacific seaboards.

The destinations of vessels will be seen from the following statement. Clearances to the United Kingdom, United States and Japan showed increases. The falling-off in the clearances to Egypt is due to the reduction in the shipments to Egypt " for orders " as a result of the cessation of hostilities.

Tonnage clearances with cargoes and in ballast.

——	1913–14 (pre-war year).		1918–19.		1919–20.	
	Vessels.	Tons (1000).	Vessels.	Tons (1000).	Vessels.	Tons (1000).
To United Kingdom	549	1,879	318	1,198	476	1,913
To Egypt	79	235	244	624	64	172
To Japan	194	582	168	394	183	479
To United States ...	102	340	92	302	121	432
To Other Countries	3,399	5,726	4,038	2,767	3,313	3,506
Total ...	4,323	8,762	4,860	5,285	4,157	6,502

Coasting Trade.—The total tonnage, excluding native craft, that entered and cleared Indian ports with cargoes during 1919-20 was 15,270,000 (entries 7,467,000 tons and clearances

7,803,000 tons) as compared with 9,865,000 in 1918-19 and 28,502,000 in the pre-war year. *Of the total, British vessels accounted for 78 per cent., British Indian vessels 15 per cent. and foreign vessels 7 per cent., of which Japan had 3 per cent.* The tonnage of native craft in the coasting trade, which is not included in the above figures, was 3,150,000 tons. The entry of Japanese ships into the coasting trade of India during the past few years has occasioned considerable comment, and therefore the following table showing the number and tonnage of Japanese vessels which entered and cleared with cargoes in the coasting trade from 1916-17 to 1919-20 may be of interest:—

	Entered with Cargoes.							
	1916-17.		1917-18.		1918-19.		1919-20.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Bengal ...	36	95,966	34	73,541	33	88,939	41	98,565
Bombay ...	9	18,779	7	9,764	6	11,254	5	9,384
Sind ...	2	4,725	4	6,248	—	—	—	—
Madras ...	16	48,962	11	31,780	7	17,690	8	14,427
Burma ...	39	102,779	30	70,846	36	89,079	42	88,703
Total ...	102	271,211	86	192,179	82	206,962	96	211,079

	Cleared with Cargoes.							
	1916-17.		1917-18.		1918-19.		1919-20.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Bengal ...	26	69,712	19	44,459	19	41,253	27	54,996
Bombay ...	19	52,799	19	45,458	18	53,797	7	20,112
Sind ...	2	3,681	2	2,698	1	1,855	1	2,834
Madras ...	2	5,848	—	—	3	4,710	5	8,795
Burma ...	51	126,623	42	87,718	31	77,526	46	103,688
Total ...	100	258,663	82	180,333	72	179,141	86	190,425

Freights.—The following statement, compiled by the Director of Statistics from the various Chambers of Commerce Prices Current, shows the average freights on the leading commodities of export over a series of years.

Statistics of average Maritime Freights, in 1899, 1909, 1913, 1914 and 1918 to 1920.

Articles.	Freights to	Rate per	1899.	1909.	1913.	1914.	1918.	1919.	(Average for first three months.) 1914.	1918.	1919.	1920.
Calcutta.*			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Rice	London ..	Ton ...	1 2 10	0 17 11	1 7 6	1 4 0	15 2 0	5 10 7	1 1 3	15 10 0	4 11 2	6 11 3
Wheat	,,	,, ...	1 2 10	0 17 11	1 7 6	1 4 0	15 2 0	5 10 7	1 1 3	15 10 0	4 11 2	6 11 3
Linseed ...	,,	,, ...	1 5 4	1 2 3	1 10 0	1 6 5	14 12 6	6 0 10	1 2 11	14 12 6	5 4 2	7 4 2
Rapeseed	,,	,, ...	1 8 3	1 2 10	1 12 6	1 9 3	Nominal	6 17 11	1 6 3	Nominal	5 19 2	7 4 2
Jute	,,	,, ...	1 5 11	1 0 4	1 10 0	1 6 8	19 7 6	6 6 8	1 3 9	20 0 0	6 7 4	7 4 2
Cotton	,,	,, ...	1 5 11	1 0 4	1 10 0	1 6 8	—	6 1 9	1 3 9	—	5 8 0	7 4 2
Tea	,,	,, ...	2 1 7	1 11 8	1 15 0	1 16 6	15 0 0	6 15 10	1 15 0	15 0 0	6 19 8	9 0 6
Hides	,,	,, ...	2 0 0	2 5 0	2 10 0	2 12 11	33 0 0	7 16 9	2 10 0	33 0 0	8 2 6	7 19 2
Shellac	,,	,, ...	1 15 3	1 10 0	1 15 0	1 18 3	19 10 0	7 5 8	1 15 0	20 0 0	7 10 2	8 4 2
Rice	Liverpool	,, ...	1 2 11	0 18 4	1 7 6	1 4 0	15 3 6	5 10 7	1 1 3	15 12 6	4 14 2	6 11 3
Wheat	,,	,, ...	1 2 11	0 18 4	1 7 6	1 4 0	15 3 6	5 10 7	1 1 3	15 12 6	4 14 2	6 11 3
Linseed	,,	,, ...	1 5 4	1 0 9	1 10 0	1 6 5	14 12 4	6 0 10	1 2 11	14 12 2	5 4 2	7 4 2
Jute	,,	,, ...	1 7 6	1 0 9	1 10 0	1 6 8	19 5 0	6 6 8	1 3 9	20 0 0	6 7 4	7 4 2
Cotton	,,	,, ...	1 7 6	0 17 6	1 10 0	1 6 8	—	6 1 9	1 3 9	—	5 8 0	7 4 2
Jute	Dundee ...	,, ...	1 7 10	1 1 1	1 10 7	1 8 2	19 7 6	6 6 8	1 3 9	20 0 0	6 7 4	7 4 2
Saltpetre	New York	,, ...	0 10 9	1 1 0	1 10 10	1 6 9	—	6 9 6	1 5 8	—	6 0 10	6 7 5
Linseed	,,	,, ...	0 16 11	1 3 1	1 12 11	1 9 7	18 9 0	6 18 6	1 7 9	20 0 0	6 7 0	7 10 1
			R. a. p.	*R. a. p.*	*R. a. p.*	*R. a. p.*	*R. a. p.*	*R. a. p.*	*R. a. p.*	*R. a. p.*	*R. a. p.*	*R. a. p.*
Rice	Mauritius	Bag of 2 mds.	0 12 0	1 1 0	1 2 6	1 6 4	6 0 0	5 14 0	1 3 4	6 0 0	Nominal	5 14 0
Bombay.†			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat	London ...	Ton ...	0 17 5	0 12 1	0 17 6	0 13 7	—	5 9 0	0 13 5	—	3 15 0‡	5 17 2
Seed	,, ...	,, ...	0 17 5	0 12 1	0 17 6	0 14 5	10 6 6	4 17 6	0 14 4	10 11 8	4 8 2	4 5 3
Cotton	Liverpool	,, ...	0 17 7	0 12 0	0 18 0	0 13 9	15 5 5	5 2 6	0 14 0	16 5 0	6 8 4	4 5 0
Wheat	,,	,, ...	0 17 4	0 12 4	0 18 6	0 14 8	14 2 2§	5 0 9§	0 12 6	14 11 8§	3 15 0‡	5 17 2§
Seed	,,	,, ...	0 17 4	0 12 8	0 17 3	0 13 6	9 7 11	4 16 5	0 14 0	9 19 0	4 8 0	4 0 6

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Motor Transport.

Motor transport is rapidly extending in the principal trade centres, and motor lorries are now gradually superseding the archaic bullock cart in the transport of goods between docks and warehouses in Calcutta and Bombay. Several transport companies have been formed within the past two years, and one of these Calcutta concerns has recently been running a goods service between Calcutta and the colliery district. The Postal Authorities are also employing motor vans and lorries for city delivery and also for the heavy hauls up to the various hill stations in Kashmir and elsewhere where railway facilities do not exist. Motor omnibuses have, so far, made very little headway in the ports, where excellent tramway services exist, but there is an extending network of such services round Delhi and in one or two other centres in Northern India. The advantages of motor transport, both for the conveyance of passengers and goods, have not yet been sufficiently realised in India, but there is little doubt that within the next few years there will be a very great advance made, and the present deterioration in the railway services and shortage of coal may tend to expedite this. The demand for motor vehicles of all kinds from the light 1-ton truck to the 5-ton lorry will be very great. British makers are well represented in the heavier categories, but find American competition very acute in the lighter and cheaper types of trucks.

Civil Aviation.

I am indebted to the Commerce Department of the Government of India for the following note on the present position of civil aviation :—

The subject of Civil Aviation is dealt with by the Commerce Department of the Government of India, who are assisted by an Air Board composed of the Secretary to the Government of India in the Commerce Department, the Air Officer Commanding the Royal Air Force in India, the Director-General of Posts and Telegraphs, the Financial Adviser, Military Finance, and the Director-General of Observatories. The functions of the Board are purely advisory and it has no executive authority.

Air Laws and Regulations.—Civil aviation in India is governed by the Indian Aircraft Rules, 1920, which have been made under the Indian Aircraft Act, 1911, as amended. The Act and the Rules are not in strict conformity with the provisions of the International Air Navigation Convention. As, however, India is a party to the Convention, it is incumbent on the Government to bring their air laws and regulations in line with the international requirements of aerial navigation as set forth in the Convention. The matter is already under consideration and will receive the earnest attention of the Government of India as soon as the Air Navigation Bill now before Parliament has been enacted.

Provision of Civil Aerodromes.—It was originally proposed to provide aerodromes, etc., on the five aerial routes, namely,

Delhi-Calcutta,
Delhi-Karachi,
Karachi-Bombay,
Bombay-Calcutta,
Calcutta-Rangoon,

and, with this object in view, a survey of these routes was undertaken. The survey reports, however, showed that the cost of providing aerodromes and landing grounds on the routes in question would be prohibitive. It has accordingly been decided that for the present the route from Rangoon, *via* Allahabad and Calcutta, to Bombay should be prepared, attention being concentrated, in the first instance, on the preparation of the section between Rangoon and Calcutta, and that when this route or a section of it is completed, tenders for an air mail service over the completed section or sections should be called for. The general financial position has, however, made it unlikely that any funds will be forthcoming in the near future for the preparation of even a section of the route.

The Local Governments have been empowered, subject to the control of the Central Government, to lay out subsidiary air routes connecting with the main Indian trunk route (from Rangoon to Bombay) within the jurisdictions of their respective provinces.

A list of the landing grounds which are at present available for use by civilian aircraft will be found in Appendix XXV, page 326. A map of India showing all these landing grounds is under preparation.

Cairo-Karachi Air Route.—In connection with the development of Imperial air routes outside India, the only practical proposition which has so far been placed before the Government of India is that of an air mail service between Cairo and Karachi. On this subject the Government of India have expressed the opinion that the proposed service is not likely to be a commercial success. Important business between India and the United Kingdom is carried on by telegram, and the saving of time effected by an air service ending at Cairo would not be very appreciable. The service would have better chance of success if it could be extended from Egypt on to England, but even so it is doubtful whether it could compete successfully with the telegraph. On the ground, however, that it is the business of the State to encourage the development of new public services, the Government of India have agreed to guarantee not more than one lakh of rupees per annum towards the cost of this service for a period of three years. They have also agreed that all the expenditure involved in the equipment of Karachi as a terminal aerodrome should be borne by Indian revenues, which will also bear half the cost of the buildings erected on the Karachi-Bushire sector and also half the maintenance charges on these

buildings. Owing to the disturbed state of Mesopotamia, however, it is improbable that the proposed service will come into existence for some time to come.

Air Transport Companies.—At present there is only one company in India, viz., The Handley Page Indo-Burmese Transport, Ltd., at Dum Dum, and its performances represent the sum total of the civil aviation activities in this country. It is to be regretted that, owing to general lack of support, the company has recently gone into voluntary liquidation.

100 Gift Aeroplanes.—The Government of India have received a free gift of 100 aeroplanes from His Majesty's Government (60 D.H.9's with Siddeley-Puma engines, and 40 Avros with Mono engines). Some of these aeroplanes have been offered to and accepted by Local Governments; others have been offered to Ruling Princes, and 20 Avros have been made over to the Royal Air Force for instructional purposes. The remainder are being offered to Aero Clubs and ex-Royal Air Force officers resident in India and to other individuals or companies prepared to establish schools of instruction in aviation. Altogether about 50 machines have so far been disposed of in the manner indicated above.

Posts, Telegraphs and Telephones.

Posts.—The Post Office in India is a remarkable Institution. As the Officiating Director-General of Posts and Telegraphs states in his 1919-20 Report: "The primary functions of the Post Office are admittedly confined to the collection, conveyance and delivery of correspondence; but the Post Office of India to-day, besides handling correspondence, acts as bankers and agents of the public, enables them to do their shopping from a distance, sells quinine, is a Life Insurance Company for Government Employees, collects Customs duty, receives salt revenue, and pays the pensions of retired soldiers of the Indian Army." The following brief notes of the progress of postal facilities in 1919-20 are taken from the last Annual Report of the Department for the year 1919-20.

The general business of the Indian Post Office expanded in all branches during the year 1919-20, owing to generally favourable trade conditions. The total number of postal articles of all kinds, excluding money orders, transmitted during the year is estimated at 1,367 millions, and the net surplus on the year's working amounted to Rs.7,364,682 as compared with Rs.3,802,465 during the previous year.

Mails.—Mail services which had been discontinued during the war were again opened up and the weekly mail service from the United Kingdom was resumed in January, 1919, the Marseilles route being used for letter mails, the average times of transit between London and Bombay being 20 days 14 hours. In addition, mail services to Australia and other parts of the world were extended as a result of improved steamship facilities. The volume of the letter mail increased by 133

millions, or over 11 per cent., to 1,313 millions. From January 25th to March 11th, 1920, an aeroplane service was maintained between Bombay and Karachi in connection with the inward and outward English mail steamers, the period of transit representing six hours flying and the flying speed being usually above 100 miles per hour. Unfortunately it was found that the service was not largely used for mails and so it was discontinued. Statistics of foreign correspondence were kept for the first time since the outbreak of war and disclosed the fact that foreign correspondence did not reach the pre-war levels. It is estimated that the total number of letters, postcards and packets sent and received by the foreign mail was 59½ millions, 14 millions being sent to and 18½ millions being received from the United Kingdom.

Parcel Mail.—There was an increase of 11 per cent. in the parcel traffic of the year. The principal event of the year, so far as the foreign parcel traffic is concerned, was the removal of restrictions on the parcel service to the United Kingdom, Europe and the United States of America with the result that there was an increase of 7·42 per cent. in the exports and of 10·32 per cent. in the imports. The number of parcels received from the United Kingdom was 474,191 and the number despatched was 411,802.

Imperial Cash-on-Delivery Service.—The inauguration of a cash-on-delivery (or, as it is known in India, a value-payable-post) service with the United Kingdom had been suggested many times before the war, but opposition from Trades Associations and individual retailers in India had postponed its inception until the year 1920. A service was started in the spring of the last year and the first mail with 42 C.O.D. parcels valued at £164 was received in Bombay on May 17th, 1920. The service has steadily progressed, but owing to the fact that its existence is as yet not sufficiently known and also owing to the number of parcels, delivery of which has not been taken in India owing to the fall in exchange and the slump in trade, the progress has been slow. In Appendix XXVI, page 327, will be found a statement courteously furnished by the Director-General of Posts and Telegraphs, showing by quarters the number of C.O.D. parcels exchanged with the United Kingdom, and the trade charges recoverable thereon. During the fifty weeks that the service has been in operation, the average amount of trade charges recoverable is over £1,600 per week. This may seem to be disappointing at first sight, but it should be remembered that the period has been marked by most acute trade depression and there has been a tendency among certain buyers to repudiate their liabilities. The result is that delivery of hundreds of parcels, both in India and Ceylon, has been refused and this has tended to discredit the service among British shippers. There is little doubt, however, that it supplies a long-felt want and is likely to be of great material advantage to British residents in India, and when normal times recur the service should expand considerably.

The inland value-payable-post service continued to increase in 1919-20. The number of articles transmitted rose to over 11¼ million with an aggregate amount for recovery of Rs.1,987 lakhs. The traffic with Ceylon amounted to Rs.16¾ lakhs recovered from, and just over Rs. 1½ lakhs recovered for that colony.

No less than 14,840,529 articles were consigned to dead letter offices during the year.

Money Orders.—The exchange position during the year encouraged remittances to gold-standard countries and the effect on the volume of business transacted was so great that it deserves special comment. The Director-General deals with it in the following terms :—

"The inland money orders include ordinary, telegraphic, value-payable, rent, revenue and official orders, while the foreign comprise ordinary and telegraphic both in sterling and rupee currency, the latter being exchanged with Ceylon, the Portuguese Settlements in India, East Africa and the Far East. Nearly 39 millions of money orders, remitting Rs.870½ lakhs, were issued during the year and over a million sterling was sent and paid by British Postal Orders alone. Large increases occurred in the sterling transactions on account of heavy supplies of British Postal Orders to demobilized troops and a run on the Post Office towards the end of the year in consequence of market fluctuations in the rate of exchange. In the sterling exchanges, which are in force with the United Kingdom and British Dominions and with foreign countries generally, the total number of money orders sent and received was 489,185 of the aggregate value of £9,111,945 compared with 314,521 for £4,467,589 in the preceding year. This abnormal increase was due almost entirely to the fact that owing to the favourable exchange the number and amount of money orders drawn in India on the United Kingdom rose from 159,033 and £832,020 during 1918-19 to 341,054 and £4,848,710, respectively during the year under report.

"Foreign rupee money orders which are exchanged with Ceylon, the Portuguese Settlements in India, East Africa and the Far East, fell from 504,008 to 461,776 in number, and from 2 crores 73 lakhs to 2 crores 66 lakhs in amount sent and received.

"In past years, remittances to India have generally exceeded those from this country, and although this was still true in respect of the sterling and rupee exchanges taken together the amount of sterling orders issued from India during the year exceeded the amount received for payment. As already explained, this was due to the heavy drawings on the United Kingdom. This was particularly noticeable during the latter part of the year, the sterling money orders drawn on the United Kingdom in February and March, 1920, amounting to nearly 1½ million pounds sterling. The balance in favour of foreign administrations was over £839,000 on

sterling money orders while that in favour of India in respect of rupee money orders exceeded Rs. 2,10,20,000.

"In the sterling money order exchanges the largest amounts were received from Egypt, United Kingdom, Union of South Africa, Italy, New Zealand and New South Wales and in the rupee exchanges, from Ceylon, Siam, Federated Malay States, British East Africa and Straits Settlements."

Telegraphs.—The Indian Telegraph system at March 31st, 1921, consisted of 88,417 miles of line or cable carrying 369,273 miles of wire, and, notwithstanding the difficulty of securing materials, 11,801 miles of wire and cable conductor were added to the system during the year. The number of offices maintained by the Department was 10,440.

Inland Telegrams.—The total inland traffic amounted to nearly 17 million messages of an aggregate value of over Rs.213 lakhs. Press telegrams showed an increase of 25 per cent. in number over previous years.

Foreign Telegrams.

"During the first half year the delays on the cables were very serious; a marked improvement was noticeable later which was immediately responded to by a large increase in traffic. The foreign urgent telegram at triple rates was introduced from 25th March, 1920, and that this met a public want is shown by the fact that some 10 per cent. of foreign private telegrams are sent by this class.

"Foreign telegraphic traffic was still hindered by the interruption of the Teheran and Turkey routes to Europe and the consequent sole use of the only remaining route via Suez. In order to relieve the congestion on the Suez route and to provide additional capacity for increased traffic in the near future the Eastern Telegraph Company laid a new cable between Porthcurnow and Gibraltar, which was completed on the 7th December, 1919, and another from Malta to Alexandria was completed on the 28th February, 1920. Arrangements were also made to lay new cables between Bombay and Aden and between Malta and Alexandria. In addition it is proposed to take two of the Aden-Suez cables into Port Sudan where repeaters will be installed giving an estimated increase of speed of 50 per cent.

"Communication with China via Bhamo was interrupted for 1,435 hours during the year, the interruption reports being confined principally to the section between Bhamo and Yunnan. No information was received regarding the state of communication beyond Yunnan. There was also interruption of about 1,408 hours in communication with Siam via Moulmein.

"Direct cable communication with Australia and the Far East via Madras was maintained throughout the year without interruption. The Eastern Extension Australasia and

China Telegraph Company have arrangements in progress to lay a new cable on the section Madras to Singapore.

" Owing to the high rate of exchange it was possible with effect from 1st March, 1920, to reduce the word rate on telegrams to Europe from Re.1-4 to Re.1, the rate to all other countries being subsequently reduced on the same basis.

" The number of foreign telegrams dealt with was rather more than 2½ millions containing some 45½ million words. Both figures represent an increase. State telegrams showed a great reduction in number and length, the number having fallen by 21 per cent. and the number of words per message by 27 per cent. Private foreign traffic at full rates increased in messages and words, but in the deferred class there were reductions. Press telegrams also showed a marked decrease."

Wireless Telegraphy.—" The important decision was taken during the year to form a separate Wireless Branch of the Telegraph Department to deal with all matters connected with civil wireless telegraphy in India, and in pursuance of this decision five officers were brought out from England to inaugurate the branch.

" All wireless stations worked satisfactorily throughout the year, except at times of abnormally heavy atmospheric disturbances, and gave valuable assistance on occasions when communication by the land lines was interrupted. Wireless communication was carried on between Bombay and Aden, Bombay and Ceylon, the Bay stations and Penang, and Karachi and the Persian Gulf. Experiments were also commenced with a view to establishing a wireless service between Burma and the Malay Peninsula but these had unavoidably to be postponed.

" New apparatus was imported which considerably improved the efficiency of the several stations equipped with it, particularly as regards receptivity during unfavourable conditions, and certain modern transmitting apparatus employing thermionic valves was also obtained and tested for use in India.

" It was found necessary to form a combined civil and military school at Karachi as a temporary measure to meet a serious shortage of operators for civil and military requirements."

Telegraph Stores.—" The value of the telegraph stores obtained during the year amounted to Rs.117¼ lakhs, the greater part of which was expended on stores imported from England, Rs.19,85,422 worth of stores was received from the departmental workshops and Rs.6,82,880 were spent on purchases in India. The value of the issues made on 20,416 indents during the year amounted to Rs. 120¼ lakhs, Rs.17 lakhs being on account of transfers to other Government Departments and sales to the public. The value of the

stock of stores in hand at the end of the year was Rs.60 lakhs.

" The Telegraph Workshops now rank among the principal engineering workshops in Calcutta and are probably alone in India in the range of their undertakings. These include, besides the ordinary telegraph line stores such as steel poles with fittings, masts and submarine cables, the supply of quantities of special furniture, a large proportion of the telegraph instruments employed by the Department, telephone exchange switchboards, certain wireless requirements and the maintenance of the postal fleet of 40 motor lorries in Calcutta. The shops possess a modern foundry producing 200 tons of castings a month and have plants for cable-making, steel tubes, nickel plating, and galvanising, the last consuming 1,000 cwts. of zinc monthly.

" The value of stores manufactured by the workshops was nearly Rs.24½ lakhs but in addition to its manufacturing work the shops repaired as many as 17,344 telegraph instruments during the year. Rapid progress has been made in the Instrument Branch in consequence of additions to the expert staff, and a system of apprenticeship has been introduced which is confidently expected to produce a body of workmen skilled in high-class work comparable to that of any country."

Telephones.—" The demand for telephones during the year continued to increase, but owing to the difficulty of obtaining instruments, underground cables and exchange switchboards from England the public demand could not be met in full. There is no doubt that when material is available the Telephone Service will expand very rapidly.

" On 1st January, 1920, there were 245 exchange systems worked by Government with 8,975 connections and 325 independent non-exchange systems with 1,058 connections. The gross rental of all telephones provided by this Department excluding those supplied to railways and canals was Rs.14,53,386 as against Rs.12,41,115 for the previous year, while the number of connections increased by 1,909.

"The Licensed Telephone Companies worked 13 exchanges with 17,810 connections the rents for which amounted to Rs.29,67,821. This is an increase of 2,157 connections and nearly Rs.4 lakhs rent from the figures for last year.

" At the close of the year 1,558 miles of telephone trunk lines were in use involving 4,104 miles of wire. These trunk lines are all available for public use. The difficulty of obtaining the necessary material from England, in this as in all telephone work, has retarded expansion."

CHAPTER VII.

FINANCE AND EXCHANGE.

The course of exchange during the past two years has affected not only the foreign trade of India but also industrial and financial conditions in the country to such a remarkable degree that it would appear desirable to give a brief survey of the principal movements in currency and exchange during the period. I am indebted to the reports of the Controller of Currency for the greater portion of the following information and for the tables which are given.

The Balance of Trade.—The following table, compiled by the Controller of Currency, summarises over a period of years the principal factors in the overseas trade of the country which affect the balance of trade :—

(*In lakhs of rupees.*)

Year.	Gross exports of private merchandise.	Gross imports of private merchandise.	Net exports of private merchandise.	Imports of Funds and Treasure on Private Account.						Balance Net export transactions+ Net import transactions—.
				Council Bills (payments in India).	Gold—Sovereigns. (Net.)	Gold bullion. (Net.)	Silver bullion and coin. (Net.)	Government Securities. (Net.)	Total 4 to 8.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1910-11 ...	2,09,88	1,29,35	80,53	39,43	12,24	11,74	8,57	2,43	74,41	+6,12
1911-12 ...	2,27,84	1,38,57	89,27	40,17	27,34	10,42	5,29	1,06	84,28	+4,99
1912-13 ...	2,46,09	1,61,00	85,09	38,33	26,43	11,15	6,57	53	83,51	+1,58
1913-14 ..	2,48,88	1,83,25	65,63	46,60	11,34	11,98	6,24	1,12	77,28	—11,65
1914-15 ...	1,81,59	1,37,93	43,66	*— 2,27	1,65	6,80	10,01	35	16,54	+27,12
Average for 5 years.	2,22,86	1,50,02	72,84	32,55	15,80	10,42	7,33	1,10	67,20	+ 5,64
1915-16 ...	1,97,38	1,31,99	65,39	*23,71	†32	†4,58	5,58	90	35,09	+30,30
1916-17 ...	2,45,15	1,49,62	95,53	47,07	1,77	†2,43	†—2,16	52	49,63	+45,90
1917-18 ...	2,42,56	1,50,42	92,14	50,72	6,42	†15,04	†1,46	83	74,47	+17,67
1918-19 ...	2,53,85	1,69,03	84,85	*23,83	—	†2	†6	—70	23,21	+61,64
1919-20 ...	3,26,79	†2,05,39	†1,21,40	*18,23	31	†10,66	†—15	1,34	30,39	+91,01
Average for 5 years.	2,53,15	1,61,29	91,86	32,71	1,76	6,54	96	58	42,55	+49,31
1920-21 ...	2,56,38	3,35,51	—79,15	*—28,55	2,26	—11,14	7,42	56	—30,55	—49,70

	1914-15.	1915-16.	1918-19.	1919-20.	1920-21.
* Council bills and transfers	10,79	31,05	30,91‡	34,55	—
Sterling drafts on London	13,06	7,34	7,08	18,58	28,55
Telegraphic transfers issued by the Bank of Montreal, New York.	—	—	—	2,26	—
	—2,27	23,71	23,83	18,23	—28,55

† Figures adjusted as explained in the Currency Report for the year.
‡ Includes 501 paid by the issue to the Exchange Banks of 12 months' Indian Treasury Bills.

The above figures clearly show that during the ten years 1910-11 to 1919-20 there was a heavy excess of exports of goods over imports, the average excess for the five years 1915-16 to 1919-20 being no less than 92 crores of rupees. Even after allowing for adjustments such as the heavy sales of Council Bills, and the excess imports of gold and silver coin and bullion and Government securities, the average net balance of trade in India's favour averaged 49 crores for the period. In 1920-21, however, the position was completely reversed. There was an excess of imports of merchandise of 79 crores, and in spite of the large sales of Reverse Council Bills the net balance of trade *against* India was 49 crores. A favourable annual trade balance of approximately £50,000,000 sterling had in one year been changed to an adverse balance of the same amount.

The reasons for this almost unprecedented state of affairs are briefly as follows. The end of the war found India depleted of those supplies of foreign goods, such as textiles, metals, machinery, &c., on which her economic life depends. The 1919 monsoon had been a good one and India had accumulated large surplus funds for the purchase of goods. Moreover, during 1919, exchange had steadily risen and had further enhanced this accumulated purchasing power. The natural result was that orders on a prodigious scale were placed in the United Kingdom, United States of America, Japan and other countries, and these, together with the undelivered balance of indents placed during the war, were shipped to India during last year. The goods were bought at the highest levels of price, and the gross total value of the imports during the year was actually double the average of the five preceding years. We see the aftermath to-day in overstocked markets and stagnation in the clearance of goods.

On the other hand, the markets of Central Europe, which normally take such a large share of India's exports, continued to suffer from internal disorganisation and adverse exchanges and were not in a position to purchase such articles as jute, cotton, hides and oilseeds, which are the backbone of the export trade. The general fall of prices in the United States and the United Kingdom also acted as a severe check on the purchases of Indian goods. Merchants in London and New York found themselves faced with heavy stocks of high-priced produce and a declining demand. The result has been, not only an almost complete cessation of fresh purchases, but also the realisation of heavy losses on stocks of tea and other commodities. Exports from India steadily declined and by March, 1921, the country found herself in the midst of one of the most acute periods of economic depression which had been experienced in the lifetime of most merchants.

Fall in the Price of Silver.—The trade position outlined above synchronised with a most remarkable fall in the value of silver. The following statement, compiled by the Controller of Currency, records the highest and the lowest, as well as the average,

quotations for silver in London per standard ounce and for foreign silver in New York per fine ounce during the year 1920-21 :—

	London.			New York.		
	Highest.	Lowest.	Average.	Highest.	Lowest.	Average.
	d.	d.	d.	Cents.	Cents.	Cents.
April ...	(1st and 7th) $72\frac{1}{8}$	(30th) ... $64\frac{1}{2}$	$68\frac{37}{64}$	(6th) ... 127	(30th) ... $111\frac{1}{2}$	$119\frac{3}{16}$
May ...	(3rd) ... $65\frac{1}{2}$	(31st) ... $57\frac{1}{4}$	60	(1st) ... $110\frac{1}{2}$	(29th) ... $99\frac{3}{8}$	$102\frac{3}{8}$
June ...	(1st) ... $57\frac{3}{8}$	(15th) ... 44	$51\frac{15}{16}$	(5th) ... $99\frac{7}{8}$	(16th) ... 80	$94\frac{9}{32}$
July ...	(26th and 31st) $56\frac{3}{8}$	(2nd and 3rd) $51\frac{1}{8}$	$53\frac{3}{4}$	(26th) ... 95	(19th) ... $88\frac{3}{4}$	$91\frac{7}{8}$
August ...	(20th and 21st) $63\frac{3}{4}$	(2nd) ... 57	$59\frac{7}{8}$	(20th and 21st) $101\frac{3}{4}$	(4th to 31st) $92\frac{3}{4}$	$96\frac{3}{8}$
September	(15th) ... $60\frac{3}{4}$	(1st) ... $57\frac{3}{8}$	$59\frac{15}{32}$	(15th) ... 95	(1st) ... $91\frac{1}{2}$	$93\frac{21}{32}$
October ...	(1st) ... 59	(19th) ... $50\frac{1}{2}$	$54\frac{3}{16}$	(1st) ... $91\frac{1}{2}$	(19th) ... $76\frac{1}{4}$	$83\frac{5}{8}$
November	(10th) ... $54\frac{3}{4}$	(30th) ... $43\frac{7}{8}$	$50\frac{15}{16}$	(4th) ... $82\frac{3}{8}$	(30th) ... $68\frac{1}{2}$	$77\frac{21}{32}$
December ...	(3rd) ... $44\frac{3}{4}$	(10th) ... $38\frac{7}{8}$	$41\frac{7}{8}$	(3rd) ... 70	(10th) ... $59\frac{1}{4}$	$64\frac{3}{8}$
January ...	(5th and 6th) $42\frac{1}{2}$	(31st) ... $35\frac{1}{8}$	40	(6th) ... $68\frac{3}{4}$	(31st) ... $59\frac{7}{8}$	$65\frac{1}{16}$
February ...	(3rd) ... $37\frac{3}{4}$	(25th) ... $31\frac{3}{8}$	$34\frac{3}{4}$	(3rd) ... $63\frac{3}{8}$	(25th) ... $54\frac{3}{8}$	$59\frac{1}{16}$
March ...	(22nd) ... $34\frac{1}{2}$	(5th) ... $30\frac{3}{8}$	$32\frac{15}{32}$	(22nd) ... $58\frac{3}{4}$	(5th) ... $32\frac{3}{8}$	$55\frac{7}{8}$

To quote the words of the Controller—"On the 11th February, 1920, the price of silver in London had reached the record figure of $89\frac{1}{2}d.$, this having been due very largely to a strong demand from China. By the 1st April, however, the price had fallen to $72\frac{1}{8}d.$, owing principally to sales on account of China. There were also other factors which contributed to the reaction, viz., the strengthening of the sterling exchange with New York, the announcement of the intention to reduce the fineness of the United Kingdom silver coinage, and large sales of demonetised coin from the continent. The fall in price continued until $44d.$ was reached on the 15th June. In the third week of June, however, the United States Mint began to accept tenders made under the Pittman Act; a revival in the price of silver immediately followed, since this action represented the withdrawal of one-quarter of the world's production from competition in the market. There was a good deal of speculative buying and a demand set in from the Indian bazaars. This, coupled with a weakening in the sterling-dollar exchange, raised the London price to $63\frac{3}{4}d.$ by the 20th August. The price remained at or about $60d.$ until the end of September, but early in October it began to weaken; by this time it was known that the Indian monsoon had been below the average and exports of merchandise from China had fallen off. From the 19th November the fall became rapid. China was now known to be in the grip of a severe famine, and large quantities of demonetised coin continued to come in from the continent of Europe. The quotation at the end of December was $40\frac{7}{8}d.$, having been as low as $38\frac{7}{8}d.$ on the 10th of that month. During the remaining months of the year under review the trend of prices was continuously downward. Continental supplies were freely offered and China was more a seller than a buyer. During this period practically the only support of the market was from India. The lowest price recorded was $30\frac{3}{8}d.$ on the 5th March, though there was a slight recovery before the end of the year."

The Course of Exchange.—These remarkable changes in the two principal factors which influence exchange, viz., (1) the price of silver, which affects the intrinsic value of the rupee, and (2) the balance of trade, which controls the supply of and demand for bills and remittances, were calculated severely to depress the rupee-sterling exchange, and it is therefore not surprising that there was a steady fall in the price of telegraphic transfers on London from 2*s.* 4*d.* on April 1st, 1920, to 1*s.* 2$\frac{7}{8}$*d.* on March 7th, 1921. The highest and lowest market quotations for T.T. on London in each month were as follows :—

	Highest.	Lowest.
1920.	*s.* *d.*	*s.* *d.*
April	2 4 (1st)	2 3$\frac{3}{8}$ (30th)
May	2 3$\frac{3}{8}$ (1st)	2 0$\frac{1}{2}$ (17th)
June	2 1$\frac{1}{4}$ (1st)	1 8$\frac{1}{2}$ (29th)
July	1 11 (27th)	1 8$\frac{3}{4}$ (1st)
August	1 10$\frac{3}{4}$ (1st)	1 10$\frac{1}{4}$ (19th)
September	1 10$\frac{1}{2}$ (15th)	1 9$\frac{3}{8}$ (30th)
October	1 9$\frac{3}{8}$ (1st)	1 6$\frac{1}{2}$ (9th)
November	1 8$\frac{1}{8}$ (5th)	1 6$\frac{3}{8}$ (27th)
December	1 6$\frac{3}{8}$ (1st)	1 4$\frac{3}{4}$ (7th)
1921.		
January	1 6$\frac{1}{8}$ (8th)	1 4$\frac{3}{4}$ (31st)
February	1 4$\frac{3}{4}$ (5th)	1 3 (25th)
March	1 3$\frac{11}{16}$ (31st)	1 2$\frac{7}{8}$ (7th)
April	1 3$\frac{13}{16}$ (1st)	1 3$\frac{5}{8}$ (15th)
May	1 3$\frac{3}{4}$ (2nd)	1 3 (23rd)
June	1 3$\frac{3}{4}$ (10th)	1 3$\frac{3}{16}$ (6th)
July	1 3$\frac{15}{32}$ (1st)	1 3$\frac{3}{16}$ (7th)
August	1 5$\frac{1}{8}$ (23rd)	1 3$\frac{7}{16}$ (1st)
September	1 5$\frac{3}{4}$ (22nd)	1 4$\frac{1}{16}$ (5th)
October	1 5$\frac{9}{16}$ (1st)	1 4$\frac{11}{32}$ (25th)

The Currency Committee.—The recommendations of the majority of the Currency Committee, whose report was published in February, 1920, have had such an influence on what has occurred during the past year that it will be as well to trace the events which led to the appointment of the Committee and then describe the attempts made by the Government of India to give effect to the Committee's recommendations. I cannot do better than quote the 1919-20 Report of the Controller of Currency, which very clearly describes the events of 1919 :—

> " Within the limits of this report it is impossible to attempt more than a brief summary of the events which led to the appointment of the Committee on Indian Exchange and Currency, which sat in London during the year, and of the recommendations as to future policy which resulted from their deliberations. The later years of the war introduced problems to meet which temporary measures were adopted. But the months following the cessation of hostilities, so far from seeing the problems pass away, were months of growing difficulty. Of paramount importance from the point of view of Indian exchange was the rapid enhancement of the price of silver. In its early stages this upward movement was gradual, but before the opening of 1919-20 it had led to the raising of the minimum rate for immediate telegraphic transfers on India to 1*s.* 6*d.*—a measure adopted to maintain

the exchange value of the rupee at a level above its bullion value. With the commencement of 1919-20 new factors came into play which precipitated the upward trend of exchange. The removal in May, 1919, of the control over the export and price of silver in America left the price at the mercy of an overwhelming demand from China following on a period of decreased output at the mines. The effect of this upon Indian exchange was further enhanced by the heavy depreciation of sterling in terms of gold which simultaneously took place. During the war the London-New York exchange had been pegged at $4{\cdot}76\frac{7}{16}$ dollars by concerted action between the British and American Governments. In March, 1919, Government support of exchange was withdrawn, and the dollar sterling rate entered upon a rapid decline until a minimum rate of 3·25 dollars to the pound sterling was reached early in February, 1920. The immediate effect of the weakening of American exchange was to raise the sterling price of silver and thus to increase the menace to the token character of the rupee.

" Two facts then stood out. Sterling had parted company with gold and a fixed exchange value for the rupee could no longer be maintained with both. The price of silver was rising to unprecedented heights, and a constant adjustment of exchange was necessary if India's rupees were to be preserved from the melting pot. Accordingly, in May, 1919, a Committee to advise on Indian exchange and currency was appointed, the terms of reference running ' to examine the effect of the war on the Indian exchange and currency system and practice and upon the position of the Indian note issue, and to consider whether in the light of this experience and of possible future variations in the price of silver, modifications of system or practice may be required; to make recommendations as to such modifications, and generally as to the policy that should be pursued with a view to meeting the requirements of trade, to maintaining a satisfactory monetary circulation, and to ensuring a stable gold exchange standard.'

" It would give an incorrect impression of the scope of the Committee's deliberations if all reference were omitted to the economic problems springing from the rising level of prices generally. The Government of India were indeed insistent on the importance of this economic side of the questions of currency and exchange, and the Committee's report gives ample evidence of the weight which they attach to it. For various reasons the war had brought with it a general raising of the level of prices throughout the world, and though the phenomenon was less marked in India than elsewhere India had not escaped from the infection, and in the absence of any remedy could only look forward to the gradual enhancement of her prices to the external level. The corrective influence that a high level of exchange would have on Indian prices was therefore recognised as a factor of

vital importance in determining the problems with which the Committee was confronted. The reports (majority and minority) of the Committee were published early in February, 1920, and with them an announcement by the Secretary of State in which the fundamental recommendations of the majority report were summarised as follows :—

(*a*) That the present rupee, unchanged in weight and fineness, should remain unlimited legal tender.

(*b*) That the rupee should have a fixed exchange value, and that this exchange value should be expressed in terms of gold at the rate of one rupee for 11·30016 grains of fine gold, that is, one-tenth of the gold contents of the sovereign.

(*c*) That the sovereign, which is now rated by law at rupees 15, should be made legal tender in India at the revised ratio of rupees ten to one sovereign.

(*d*) That the import and export of gold to and from India should be free from Government control as soon as the change in the statutory ratio has been effected, and that the gold mint at Bombay should be open for the coinage into sovereigns of gold tendered by public.

(*e*) That the notification of Government undertaking to give rupees for sovereigns should be withdrawn.

(*f*) That the prohibition on the private import and export of silver should be removed in due course, and that the import duty on silver should be repealed unless the fiscal position demands its retention.

" These recommendations were accepted by the Secretary of State as expressing the goal towards which Indian Administration should be directed, but the extent to which immediate effect could be given to the Committee's recommendations was conditioned largely by the consideration that the internal ratio of one sovereign for Rs.10 could not be effectively introduced so long as gold bullion in India continued to command the then existing high premium over the price indicated by the ratio. It was accordingly decided that provisionally sovereigns should remain legal tender at the rate of Rs.15, but that the import of gold should remain controlled by license with an acquisition rate of 11·30016 grains of fine gold to the rupee, and that periodical sales of gold bullion should in the meantime be continued. Effect was further given to the acceptance for exchange purposes of a gold basis for the rupee at Rs.10 by fixing week by week the rate of sterling drafts on London so as to allow for the depreciation of sterling in gold as indicated by the current rate of exchange between London and New York."

The Sales of Reverse Councils.—" Towards the end of 1919 the demand for the Secretary of State's Bills on India slackened and it became evident in January, 1920, that the flow of remittance was changing its direction. The Controller states ' at the first sale in that month, of the Rs.80 lakhs offered, only Rs.57 lakhs were taken up, and the sale on the 6th January was the last sale of councils which took place. A demand for sterling drafts on London had already

sprung up and their sale was re-opened on the 2nd January, when drafts to the extent of £1 million were offered and to the extent of £770,000 were sold. The fluctuations of the market during January were indeed so bewildering that no adequate explanation can be given of them. Speculation as to the future course of exchange was rife, the report of the Currency Committee was expected daily, and opinions differed widely as to whether the high water-mark of exchange had been reached or whether its upward tendency would still be continued. The situation is well illustrated by the sales of sterling drafts during the month. The offer of £1 million on the 2nd January was not fully taken up. At the sale on the 8th tenders for no less than £8,499,000 were received. The offer of sterling drafts was increased to £2 millions on the 15th, and remained at this figure for the two subsequent sales. On the 15th, however, tenders fell to £300,000 but again rose to £4,890,000 on the 22nd, declining to £1,334,000 at the last sale in the month. The general uncertainty prevailing as to the recommendations that would be made by the Currency Committee was set at rest at the beginning of February when the report was published As a result of the Committee's recommendations the rate for sterling drafts on London was thenceforth founded on a ratio of Rs.10 to the sovereign, allowance being made for the depreciation of sterling on the basis of the latest current rate for the dollar sterling exchange. In accordance with this principle the rate for immediate telegraphic transfers at the sale on the 5th February was fixed at 2s. $8\frac{15}{16}$d. with a rate for Deferreds higher by $\frac{1}{16}$d. The amount offered was £2 millions, but tenders received were in excess of £32 millions. At the following sale at which the rate for immediate telegraphic transfers was 2s. $10\frac{27}{32}$d. the amount offered was increased to £5 millions, in spite of which tenders for no less than £41 millions were received. From then onwards the amount offered week by week was £2 millions, and week by week this amount was largely over-subscribed. The tenders reached a maximum at the sale on the 18th March when they amounted to £$153\frac{1}{2}$ millions although the rate for immediate telegraphic transfers was fixed at 2s. $7\frac{5}{16}$d. At the concluding sale of the year on the 25th March the tenders amounted to £$56\frac{1}{4}$ millions, the rate for Immediates being 2s. $5\frac{31}{32}$d.

" In view of the fact that the sterling drafts offered for sale by Government were strictly limited in amount, the tenders received afford no exact measure of the volume of sterling remittance for which there was a demand. When at the commencement of February the rate for reverse councils went to 2s. $8\frac{15}{16}$d. the market rate for telegraphic transfers on London was quoted at 2s. $7\frac{3}{4}$d. At these rates an overwhelming demand for sterling remittance arose and the reverse councils sold were insufficient to bridge the gap

between the demand for sterling remittance and the demand for remittance to India. The necessary effect of the large excess of funds seeking remittance abroad was to depress the market rate of exchange, and the divergence between this rate and the rate at which sterling drafts were sold gradually increased until in March it was as much as 3¾d. The subsequent recovery in the dollar sterling exchange and the consequent reduction in the rate for Reverse Councils did something to reduce this divergence before the end of the month when it amounted to about 1½d. Throughout February and March, however, the divergence was very considerable, and it would be more correct to say that the volume of tenders for Reverse Councils was a measure of this divergence than to treat it as a measure of the actual demand for sterling remittance."

In Appendix XXVII, page 328, will be found a statement giving full details of all the sales of Reverse Councils from January 2nd, 1920, until their discontinuance at the end of September. Commenting on this statement, the Controller, in his 1920-21 report, states: "It will be seen from this statement that the stimulus to remittance afforded by the high rates offered in the early part of the year, which were throughout on a higher level than the rate for bank remittances, led to tenders largely in excess of the amounts offered. By the end of June, as has been described earlier in this report, the balance of trade had begun to turn against India, with the result that the market rates of exchange had not merely departed from the parity of gold but had fallen below the parity of 2*s*. Consequently at the sale of the 24th June and subsequent sales the rate adopted for immediate telegraphic transfers was 1*s*. 11$\frac{13}{32}$*d*., this representing the rate which would ultimately hold when sterling returned to parity with gold. From the details however of the later sales given in the statement below, it will be seen that applications continued to be enormously in excess of the amounts offered, since the ever increasing balance of trade against India led to the progressive reduction of the market rate for remittances. At the end of September sales of Reverse Councils since the beginning of the year had totalled £55,382,000, and the note circulation between the 1st February and the 15th September had been reduced from Rs.185 crores to Rs.158 crores. But even this substantial withdrawal of currency proved ineffective to maintain exchange in view of the abnormal activity in the imports of foreign goods and the absence of any support from exports. The Government of India therefore decided after the sale of the 28th September to withdraw for the time being their offer of sterling drafts on London. During the remainder of the year no further sales were made and the exchange value of the rupee, deprived of this support, rapidly declined."

Severe criticism has been levelled at the Government of India for their failure to carry out the recommendations of the Currency

Committee. The most prevalent view held by the mercantile community is that Government should have waited until exchange rates showed a tendency to fall below a sterling telegraphic transfer rate of 2*s*. before they threw their financial resources into the scale by selling Reverse Council Drafts. It would be out of place here to deal with this controversy, but at the same time it is only fair that the position of Government should be made known. I therefore make no apology for giving in extenso the following remarks made by the Honourable Finance Member in the Legislative Assembly in introducing the Budget on March 1st, 1921.

Statement by the Finance Member.—" I have spoken of the great swing of the pendulum of India's trade. The close of the preceding financial year had shown a trade balance of 95 crores in favour of India, taking into account movements of gold and silver. The persistent growth in imports, which increased from 21 crores in April to no less than 32 crores in December, coupled with a decline in exports in those months from 28 crores to 20 crores, resulted in the balance of 95 crores in our favour being replaced by September by an insignificant balance of less than 2 crores, since when it has been continuously against us.

" The adverse balance of trade so created has had a very powerful effect upon the rupee-sterling exchange. Twelve months ago to-day the market rate was 2*s*. 7*d*.; to-day it is in the neighbourhood of 1*s*. 4*d*. I know that there are some people who, by shutting their eyes to the conditions obtaining abroad, and forgetting that India with her large foreign trade cannot possibly remain unaffected thereby, have convinced themselves that the present overstocking of the import markets, and the existing depression in the export trade, is in some undefined way attributable to the exchange policy followed by Government. There are some people with whom it is impossible to reason. But I would ask anyone here who may honestly believe that the present (as I believe quite temporary) condition of India's trade has been due mainly to Government's sins of commission or omission, to bear in mind a few considerations. I do not propose to detain the House by attempting any dissertation on the precise relations between internal prices, the inflation of the currency, and the external changes, although the general connection between the three is admitted by every person who thinks about these problems. It will be sufficient for me to quote from the remarks made by Lord Cullen, Governor of the Bank of England, at the Brussels Conference, during the course of the debate on currency and exchange. ' I would like to confine myself,' said Lord Cullen, ' to drawing attention to the very elementary fact that the exchange of any country is merely a reflection or symptom of that country's conditions. . . . We must continue to pay our way both externally and internally, and then, unless there are special conditions which impair our neighbours' confidence in us, exchange will right itself.' To attribute the present trade conditions in India to a policy which was

enunciated twelve months ago and has obviously not yet been made effective in practice, is such a curious inversion of actual facts, and I should have hesitated to mention it at all were it not that it has received wide expression in some quarters in this country.

" There is, however, a certain feeling at the back of many people's minds for which I must confess I have some sympathy. It is a feeling of acute disappointment, tinged by some resentment against Government, not because they have succeeded in carrying out that policy, but because they have failed to do so. I put their case as follows :—' Government told us last year that they were going to adopt the advice of the Indian Exchange and Currency Committee, and had determined to link the rupee to gold at the ratio of Re. 1 = $\frac{1}{10}$th of the gold contained in a sovereign. We were told that this was the correct remedy, both for the currency troubles from which the country had been suffering, inasmuch as it would provide a very substantial guarantee of the convertibility of our note issue, and also that it would in course of time provide a cure for certain economic troubles, more especially the enormous rise in internal prices. Incidentally, it was mentioned to us that India's home charges could thereby be met by a smaller expenditure of rupees. This was the picture that you drew for us, and many of us made our business arrangements on the strength of that assurance. We entered into contracts for imports which, now that the goods arrive in the country, we cannot, owing to the slump in exchange, fulfil except at a very heavy loss. The only visible results of the new policy that we can see are, firstly, that it has failed, with the result that dealers in imported goods are in very serious financial difficulties; secondly, that the export trade is languishing; and, thirdly, that the finances of the country have suffered serious losses in the wasteful efforts to make your policy good.'

" Well, that is the charge against us; and it should not remain unanswered. I have no wish, nor, indeed, am I able, to be otherwise than perfectly frank on this subject. It would be futile for me to pretend that our own expectations have not been falsified. It would be equally futile to pretend that the attempt to make those expectations good has not seriously diminished India's sterling resources, has not caused other losses which will have eventually to be made good, and has not to some extent contributed to the excess of imports. But let me recapitulate briefly the course of events during the past two years. Throughout 1918 the enormous balance of trade in India's favour had by stages forced up the exchange value of the rupee, until in January, 1919, the situation was as follows :—The successive rises in exchange, and the very great uncertainty as to the future, had led to an insistent demand from the business public, both Indian and European, for the formulation and announcement of a clear policy. As the House knows, a strong Committee was appointed by the Secretary of State, which sat from May to

December, 1919. The Secretary of State and the Government of India decided to adopt the main recommendations of that Committee, and an announcement to that effect was made early in February last year. Looking back, it is easy enough to realise that the circumstances in which the new policy was launched were exceptional; currency conditions throughout the world were in a highly abnormal state, and even neutral countries, which had escaped much of the worst consequences of the war and had, indeed, increased their prosperity, had found it difficult to maintain their exchanges at par with the only country, the United States, where a free market in gold had been declared. In India we had to contend against a combination of particularly adverse forces. Just as the new policy was introduced, the London-New York exchange markedly weakened, with the result that the rise in the rupee exchange, required to give practical effect to the Currency Committee's recommendations, was far steeper than anyone could have anticipated. One must admit further that the conditions under which Reverse Councils were at first sold gave a powerful stimulus to the demand for remittance of funds from India to England, and aggravated the deficiency in the supply of exchange available to meet the demand. This deficiency, indeed, and the consequent great disparity between the market rate and the 2*s*. gold rate, became so great that it would have been necessary for us to have sold Reverse Councils to an almost unlimited extent if the theoretical gold parity of the rupee could be made effective in practice. We have frequently been asked to explain how far the persistence in the selling of Reverse Councils on the system first adopted was due to our deliberate choice, or how far the responsibility lay with the Home authorities. Particular emphasis has been laid on the failure to adopt the system of sale by competitive tender. I regret that it is not within the power of Government to answer these inquiries. It is sufficient to say that the situation itself compelled a change of system at the end of June, when it was decided to sell at a rate based, not on 2*s*. gold, but on 2*s*. sterling. We ourselves had hoped, and I think I can can justly say that our expectations were shared by the majority of the commercial community, that the abnormal conditions, prevailing in most of the countries which are usually our customers, would before long improve. But as time went on, it became impossible to resist the conclusion that it would be unsafe to count on a return in the near future of the usual balance of trade in favour of India; and the gradual reduction which the prolonged sales of Reverse Councils had effected in the sterling resources available for the support of exchange made it incumbent on us to withdraw from the market. Since September last there has been no attempt on the part of Government to regulate the course of exchange, and with the withdrawal of the support afforded by the sale of Reverse Councils, the market rate has sagged from a level of about 1*s*. 10*d*. at the end of September to the present level of about 1*s*. 4*d*. It has fluctuated from day to day according to the supply of and demand for exchange, and, at a time of general slackness in foreign trade, it has naturally been particularly sensitive to the export and import of gold and

silver bullion. That is the plain unvarnished tale; and if our efforts to maintain the Currency Committee's rate have so far failed, I maintain, firstly, that they were based on expectations regarding the course of trade which were at the time not unreasonable in themselves and were largely shared by commercial opinion in this country; and, secondly, that the causes which rendered it necessary to abandon those efforts were causes entirely beyond our own control. But I would ask the House to remember that I definitely told the Legislative Council last year that it was impossible to say what variations might take place in the rupee sterling exchange throughout the year. Ordinary commercial prudence should have led merchants to cover their exchange. Common commercial morality should at all events prevent those who desire to dishonour their contracts from pleading so unsubstantial an excuse as the failure of Government to make its policy good. I can imagine no severer blow to the international credit of India than that there should be a general movement on the part of some sections of her merchants to announce a policy of general repudiation.

" I can imagine, however, honourable members feeling somewhat impatient at what they may regard as merely an apology for the obvious fact that Government is not infallible. What they probably desire to know is, what practical steps does Government propose to take to ameliorate the present trade position? Have we any plan which will restore exchange to the 2*s*. level? If not, what alternative policy have we in view? Do we propose to have the matter re-examined, *de novo*, by some fresh Committee or Commission? Have we, in short, any policy at all? I desire to say quite frankly to the House that in our opinion there is no practical step which Government can take at present which would put an end to the trade depression and to the general feeling of uncertainty now existing. If honourable members have followed what I have already said regarding the present inability of our customers to purchase our produce, and the highly abnormal condition of the world's trade and exchanges, they will realise that the factors which are responsible for the present position are such that no Government, whatever its resources, could possibly control, and that the problems which they present are of the kind for which no Committee, however expert, could be likely to propound an immediate or radical solution.

" Within these limitations, we are, I need hardly say, anxious to initiate or join in any practical measures that can be devised to remedy the present ills from which India's foreign trade is suffering. For example, we have expressed our readiness to join in any practicable scheme that can be evolved for enabling those countries whose financial position is at present embarrassed, to obtain sufficient credit to allow them to purchase the raw produce of which they are in need, and which India is eager to sell to them, provided that payment can somehow be arranged for. More than one scheme for the establishment of a system of

international credits has been suggested in Europe. One of these, regarding which there has been a good deal of discussion, is that put forward at the Brussels Conference and associated with the name of Mynheer Van Ter Meulen, whose scheme, as amplified by suggestions made by Sir Marshall Reid, was recently referred by us to the Indian Chambers of Commerce. The latter have heartily welcomed any such scheme, and we have expressed to the Secretary of State our readiness to participate in any practicable system of international guarantee. Whether that or any similar scheme can be put into actual effect depends upon the question whether certain practical difficulties, which are, I think, well known to those members who represent commercial interests, can be overcome. Should the efforts to do so be successful, then I anticipate that the scheme will be of some appreciable assistance to the export trade. But, save for measures such as this, which, I fear, cannot at the best be regarded as more than palliatives, I am afraid that we can only wait upon events, and upon the efforts which are being made to put on their legs again those countries which in the past have been, and we hope also in the not distant future will again be, our principal customers.

"Nevertheless, I do not wish to conclude my remarks on the trade and exchange outlook on a note of pessimism. As regards imports, I think the position will before long cure itself. I understand that few new orders have been sent from India for some time, and it can therefore be only a question of time for the present stocks in India to be absorbed. I shall, indeed, be very surprised if the coming financial year does not show a very large decline in the aggregate amount of imports and this in itself will of course help very largely to rectify the balance of trade, and thus in time to strengthen exchange. If we are blessed with a reasonably good monsoon next summer, there ought to be a sufficient surplus of foodstuffs in this country to allow of their export, and, as for other articles of export, it cannot be long before the stocks in America and elsewhere are sufficiently cleared to enable some at least of our customers to resume their purchases. What, however, is at the bottom of my refusal to be pessimistic as to the future is the fact that the present condition of India's trade is due almost entirely to factors external to India herself. Unlike many of the European countries, there is so far nothing inherently wrong in India's own financial, industrial or commercial position. There are, it is true, certain aspects of our finances in which, in common with all other countries, we still feel the effects and after-effects of war; but we are not in the unhappy state of many other countries, where the financial situation is such as to be only remediable at the cost of efforts and sacrifices which may extend over several generations. If this Assembly will join with the Government in adopting all practicable measures to ensure a speedy restoration of the country to its normal financial health, then I think we shall be able to face the future in the confidence that India will be in a far better

position than most other countries to extract the maximum advantage from that revival of world trade on normal lines which the present troubles in Europe are hindering but cannot indefinitely postpone.

" It would, moreover, be wrong of me to leave the House under the impression that India's general currency and exchange position has in no single direction shown improvement since the war. It is true that, owing to the public revenues having been for several years continuously insufficient to meet the expenditure falling on them, the State has been obliged to finance itself to a considerable extent by the issue of currency notes against its own notes of hand—when I come to speak of our ways and means difficulties, I shall tell the House the extent to which we have been obliged to resort to this expedient in the current year. I fully admit that our currency can never be regarded as on a satisfactory basis so long as the fiduciary portion of the note issue is to so large an extent backed by our own Treasury Bills created *ad hoc*. But that is only one side of the currency position. To measure the real improvement or relapse, I would ask honourable members to turn their minds back to the position which existed in 1918, and to some extent in the following year Most members will have read, if they did not hear, the graphic account given by Lord Meston of the currency crisis of 1918 and the steps which were taken to save the country from the dangers of our note issue becoming inconvertible. At one time in that year the rupees in the Currency Reserve available for encashment of notes amounted to little more than four crores against a total note circulation of 115 crores. Throughout 1919 the position slowly improved, owing to the fact that the output of the mints was at last able to overtake the issues. The absorption of rupees was, however, still large, and the position this time last year was that we were still unable to contemplate any return to the free and unrestricted issue of rupees or encashment of notes at district treasuries throughout the country. But in the current year there has been a very substantial return of rupees from circulation, amounting up to the middle of February to about 24 crores. As soon as we saw, in June last, that the position of the note issue was sufficiently secure, we hastened to remove all the then existing restrictions both on the encashment of notes and on the internal movement of coin by rail. We have also been able to effect a contraction in the circulation of notes, the total circulation standing at present at 164 crores against 185 crores, the maximum reached at the end of January, 1920. The result is that the percentage borne by the metallic portion of the Currency Reserve to the total circulation is now no less than 53, as against 46 this time last year, and 35 on March 1st, 1919. In consequence, we no longer hear of currency notes going to a substantial discount, as compared with coin, as was the case a year or so ago throughout the country. Further, we took the earliest opportunity of removing the restrictions on the import of gold into India and

on the export of silver. The fact that we have been able to remove the restrictions on the movements of the precious metals, which war necessities had forced upon us and which still remain in most European countries, added to the great strengthening of the metallic portion of the currency reserve, is surely a matter for some satisfaction, for they are a necessary preliminary to any return to a sound currency system.

" There may be some people who do not share this feeling of satisfaction at the large return of rupees from circulation and who would contend that our currency barque has only escaped the rocks of inconvertibility to be submerged in the whirlpool of redundancy. I would certainly go so far with those critics as to agree that the large return of rupees from circulation is a reflection of the slackness in internal trade, but I would join issue with them as to its significance. I suggest that the reaction is in every way a healthy one. Personally, I regard the ebb tide, which is flowing so strongly in most of the countries of the world, and from the influence of which India cannot expect to escape, is nothing more than the result of the natural forces which must always mark the transition from a higher level of prices to a lower. Already we see signs, not as yet, perhaps, very striking or dramatic, but unmistakeable in their tendency, of the long awaited break in prices, and I think we have some justification for feeling that we have at last reached and passed the summit. In spite of the poor monsoon, the price of food grains has, on the whole, appreciably decreased during the year; in the case of rice, the decrease has been over 25 per cent., while the very marked decline in the prices of commodities like hides, jute, tea, and cotton, hardly though it has pressed on merchants and holders of stocks, must surely, if one takes a long view, be regarded as the indispensable prelude to a revival of trade on a new and lower level of general prices."

The Paper Currency Reserve.—In September, 1919, legal powers were taken by Act XXVI of 1919 temporarily to increase the permissible holdings of securities in the Paper Currency Reserve to Rs.120 crores, including Rs.100 crores in British Treasury Bills. In March, 1920, the sales of Reverse Councils were on such an unprecedented scale that the Secretary of State was unable to meet them entirely from his Treasury balances and was compelled to sell out a portion of the sterling securities in the Paper Currency Reserve. In the absence of emergency legislation permitting increased investments in Indian securities, this would have entailed the cancellation of notes to the full rupee equivalent of the sterling* securities sold and would have been likely to cause a severe monetary crisis in India. Temporary legislation was therefore passed in March, 1920, continuing the existing figure of Rs. 120 crores as the limit of permissible investment, but abolishing the

* At Rs.15 to the £.

existing restrictions as to the locale of the investments and their sterling or rupee character. The temporary Act (XXI of 1920) was replaced at the Autumn Session of the Imperial Legislative Council by the Indian Paper Currency Amendment Act (XLV of 1920), which came into force on October 1st. This Act gave effect to the recommendations of the Currency Committee regarding the eventual statutory constitution of the Paper Currency Reserve, while providing for a temporary transitional period of adjustment. The Controller of Currency describes the Act in the following terms :—

" The Act provided in the first place for the issue of currency notes against sovereigns and half-sovereigns at the new rate of Rs.10 per sovereign and against gold bullion at the corresponding rate of one rupee for 11·30016 grains troy of fine gold. In the second place, it laid down the permanent constitution of the Reserve, which is to include :—

(*a*) The Metallic Reserve, consisting of the total amount represented by the sovereigns, half-sovereigns, rupees, silver half-rupees, and gold and silver bullion, for the time being held on that account by the Secretary of State for India in Council and by the Governor-General in Council, provided that the gold coin and bullion held by the Secretary of State in the metallic reserve shall not exceed Rs.5 crores in value.

(*b*) The Securities Reserve, consisting of the securities for the time being held on that account by the Secretary of State for India in Council and the Governor-General in Council; provided that

(i) the securities held by the Secretary of State shall not be of longer maturity than one year from the date of purchase, and

(ii) the securities held on behalf of the Governor-General in Council shall be securities of the Government of India, and shall not exceed in amount Rs.20 crores. Not more than Rs.12 crores of this amount may be in securities created by the Government of India and issued to the Controller of the Currency.

Further, the Act prohibits the issue of currency notes if such issue would have the effect of raising the amount of notes in circulation to more than twice the amount of the metallic reserve.

" This statutory constitution of the Paper Currency Reserve is to be brought into force on a day appointed by the Governor-General in Council as soon as conveniently may be after the relation of the amount of the currency notes in circulation to the amount of the Reserve has been brought into conformity with the provisions above outlined and the metallic reserve is not less than 50 per cent. of the currency notes in circulation.

" During the intermediate period the Act provided for a temporary constitution of the Reserve under which the

securities of the Government of India held in the Reserve shall be limited to Rs.85 crores, and so long as the 'created securities' exceed Rs.12 crores, all interest derived from the securities in the Reserve shall, with effect from the 1st April, 1921, be applied in reduction of such excess holdings.

"Further, the Act gives power to the Governor-General in Council to issue currency notes up to Rs.5 crores in value against Bills of Exchange maturing within 90 days from their date of issue and under such conditions as the Governor-General in Council may under general or special order prescribe.

"As a result of the passing of the Act, the gold and the sterling securities held in the Paper Currency Reserve were revalued on the 1st October at the new rate of Rs.10 per sovereign, or Re.1 for 11·30016 grains of fine gold. The deficiency in the Reserve resulting from the revaluation was made up by 12 months' Treasury Bills of the Government of India issued by the Controller of the Currency to the Reserve.

"The constitution of the Reserve on the 31st March, 1920, and on the 31st March, 1921, respectively, which is given on page 227, shows clearly the effect of this operation."

Indian Money Market Conditions in 1920-21.—The year was an abnormal one and the ordinary trade demands for money were obscured by special factors. The enormous demand for remittance owing to the high exchange rates in the early months of the year, and the large amount of Reverse Councils offered to the public created a factitious stringency in the market which is reflected in the Bank rates. The year opened with the Bank of Bengal and Bank of Bombay rates at 7 per cent., and while the Bank of Bengal maintained this rate until June, the Bank of Bombay had advanced its rate to 9 per cent. on the 22nd April, but reduced it gradually to 6 per cent. on the 16th June. As the Controller states, the period was entirely abnormal and the rate of money in the market cannot be judged by ordinary standards, being influenced to a considerable extent by the large sums locked up in Reverse Councils.

During the summer and early autumn, Indian bank rates were appreciably lower than the Bank of England rate, which remained at 7 per cent. After November, however, the slump in trade was reflected by increasing monetary stringency in India and the calendar year 1920 closed with rates of 7 per cent. In the early months of 1921, the demand for money fell away owing to unusually small requirements for the finance of the Burma rice crop and the cotton crop in Bombay, and the end of the financial year on March 31st, 1921, found money rates unusually easy.

Constitution of the Paper Currency Reserve on the 31*st March*, 1920 *and* 31*st March*, 1921.

(In Rupees.)

Date.	Total Notes in Circulation.	Coin and Bullion.					Securities.	
		In India.			In England.	In Transit.		
		Silver coin.	Gold coin and bullion.	Silver bullion under coinage.	Gold coin and bullion.	Gold coin and bullion.	Held in India.	Held in England.
31st March, 1920 ...	1,74,52,45,960	33,21,91,696	(*c*)44,36,53,445	6,63,25,959	Nil.	(*c*) 3,44,71,947	(*a*)19,58,54,946	(*c*) 67,27,47,967
31st March, 1921 ...	1,66,15,69,750	61,42,09,884	(*d*)24,17,13,026	4,14,47,032	Nil.	Nil.	(*b*)68,07,15,946	(*d*) 8,34,83,862

(*a*) Includes Rs.10,09,00,000 Indian Treasury Bills.
(*b*) Includes Rs.61,26,00,000 Indian Treasury Bills.
(*c*) Converted at Rs.15 per £1 or Re.1 for 7·53344 grains of fine gold.
(*d*) Converted at Rs.10 per £1 or Re.1 for 11·30016 grains of fine gold.

The maximum and minimum rates of the three Presidency Banks during the last three years are shown in the following table compiled by the Controller of Currency :—

Presidency Bank.	Maximum.			Minimum.		
	1918-19.	1919-20.	1920-21.	1918-19.	1919-20.	1920-21.
Bengal ...	7	7	7	5	5	5
Bombay ...	7	7	9	5	5	5
Madras ...	8	8	9	6	6	6

Clearing House Statistics.—The steady advance made in the use of banking facilities in India is clearly shown in the following table which gives, in lakhs of rupees, the returns for each clearing house :—

Year.	Calcutta.	Bombay.	Madras.	Karachi.	Rangoon.	Total.
1914-15 ...	2,66,95	1,57,83	18,81	11,62	43,12	4,98,33
1915-16 ...	3,52,36	1,77,18	20,21	14,09	39,50	6,03,34
1916-17 ...	4,92,89	2,62,28	25,29	17,36	50,68	8,48,50
1917-18 ...	5,24,90	3,83,53	23,01	22,17	52,86	10,06,47
1918-19 ...	7,41,13	5,69,46	25,45	22,30	73,85	14,32,19
1919-20 ...	10,55,76	8,83,02	33,95	23,13	94,74	20,90,60
1920-21 ...	14,39,93	13,15,93	75,79	33,42	1,04,84	29,69,91

Note.—A new branch of the clearing house was opened at Cawnpore in July, the value of the cheques cleared through this branch between July, 1920, and March, 1921, being 6,63 lakhs.

During the last year the figures have been swollen by the large payments made by cheques in connection with Government loans and Treasury Bills and by the sales of sterling drafts on London, so that it is unsafe to draw the conclusion from them alone that there has been an increased use of cheques for ordinary business transactions. At the same time, there is little doubt that increasing use of cheques and other instruments of banking is being made by the Indian business community and the recent phenomenal development in joint stock enterprise is almost certain to have stimulated the use of cheques and drafts.

The Imperial Bank of India.—One of the outstanding events of the past year was the amalgamation of the three Presidency Banks of Bengal, Bombay and Madras and the opening on January 27th, 1921, of the Imperial Bank of India. This has involved such material alterations in the relations of the Government with the Bank that the following comments by the Controller of Currency will be of interest :—

" The idea of a central banking establishment for British India was mooted as early as 1836, and was the subject of a

minute by Mr. James Wilson, when Finance Member, in 1859. Again, in 1867, Mr. Dickson, the well-known Secretary of the Bank of Bengal, submitted detailed proposals for an amalgamation of the three Presidency Banks. On various later occasions the matter was brought forward without result, and it was discussed by the Chamberlain Commission on Indian Finance and Currency in 1913. The present scheme which has come to fruition was, however, the result of a *rapprochement* on the part of the banks themselves as a result of the experience gained during the war and the realisation of the desirability of strengthening and extending the banking system in India.

" The history of the Presidency Banks in their relationship with Government, of which a clear and detailed description will be found in Sir James Brunyate's ' An account of the Presidency Banks,' falls into three well-defined stages. Prior to 1862 the Presidency Banks had the right of note issue, but were directly controlled by Government and the scope of their business was restricted by their charters. The second period was from 1862 to 1876. In 1862 the banks were deprived of the right of note issue, though by their agreements of that year they were authorised to transact the paper currency business as agents of Government. As compensation for the loss of their right of issue, they were given the use of the Government balances and the management of the Treasury work at the Presidency towns and at their branches. The old statutory limitations on their business were at the same time greatly relaxed, though the Government's power of control remained unchanged. In 1866 the agreements were revised and the paper currency business was removed from their control and placed under the direct management of Government. The third period dates from the Presidency Banks Act of 1876 by which nearly all the most important limitations of the earleir period were reimposed, but the Government abandoned direct interference in the management, ceasing to appoint official directors and disposing of their shares in the banks. The banks no longer enjoyed the full use of the Government balances. Reserve Treasuries were constituted at the Presidency towns into which the surplus revenues were drawn and the balances left at the disposal of the banks were strictly limited.

" This system continued with only minor modifications until the present year. During the war, however, the policy was deliberately adopted of reducing the amount of the balances held in the Reserve Treasuries and leaving much larger balances with the headquarters of the Presidency Banks in order to assist the money market.

" We now come to the Imperial Bank of India Act (XLVII of 1920). Under the new Act, the control of the

Bank is entrusted to a Central Board of Governors with Local Boards at Calcutta, Bombay and Madras and such other places as the Central Board, with the previous sanction of the Governor-General in Council, may determine. The Central Board of Governors consists of—

(*a*) Managing Governors, not exceeding two in number, appointed by the Governor-General in Council on recommendation by the Central Board;

(*b*) the Presidents, Vice-Presidents and Secretaries of the Local Boards;

(*c*) the Controller of the Currency, or other officer nominated by the Governor-General in Council; and

(*d*) not more than four non-officials nominated by the Governor-General in Council.

Representatives of any new Local Boards which may be constituted may be added at the discretion of the Central Board.

" The Controller of the Currency and the Secretaries of the Local Boards are entitled to attend the meetings of the Central Board, but not to vote. Under the agreement with Government, however, which will be referred to later, the Governor-General in Council is entitled to issue instructions to the Bank in respect of any matter which, in his opinion, vitally affects his financial policy or the safety of the Government balances, and if the Controller of the Currency or such other officer of Government as may be nominated by the Governor-General in Council to be a Governor of the Central Board shall give notice in writing to the Managing Governors that he considers any action proposed to be taken by the Bank will be detrimental to the Government as affecting the matters aforesaid, such action shall not be taken without the approval in writing of the Governor-General in Council. Under the Imperial Bank of India Act provision is made for the increase of the capital of the Bank. The capital of the three Presidency Banks consisted of $3\frac{3}{4}$ crores of rupees in shares of Rs.500 each, fully subscribed. The additional capital authorised is $7\frac{1}{2}$ crores in shares of Rs.500 each, of which Rs.125 has been called up, making the present capital of the Bank Rs.$11\frac{1}{4}$ crores, of which Rs.5,62,50,000 will, on completion of the first call on the new shares, have been paid up. The reserve fund of the Bank is 3 crores 45 lakhs, and on the 28th January, 1921, the first balance sheet showed the Government balance at Rs.7,96,50,000, other deposits at Rs.76,43,40,000, and cash Rs.27,04,85,000, with a percentage of cash to liabilities of 31·94.

" The Imperial Bank of India Act follows the Presidency Banks Act of 1876 in defining absolutely the class of business in which the Bank may engage, though the older limitations are modified in some minor points. It permits, for

the first time, the constitution of a London Office and the borrowing of money in England for the purpose of the Bank's business upon the security of assets of the Bank, but not the opening of cash credits, keeping cash accounts or receiving deposits in London, except from former customers of the Presidency Banks. The Act provides for an agreement between the Bank and the Secretary of State, and this agreement, which was signed on the 27th January, 1921, and is for a period of ten years, determinable thereafter by either party with one year's notice, provides, *inter alia*, for the following important matters :—

(1) All the general banking business of the Government of India is to be carried out by the Imperial Bank.
(2) The Bank will hold all the Treasury balances at Headquarters and at its branches. This involves the abolition of the Reserve Treasury system.
(3) Within five years the Bank undertakes to open 100 new branches, of which the Government of India may determine the location of one in four. It may be mentioned here that the branches and agencies of the three Presidency Banks prior to the date of amalgamation numbered 69, including the Colombo branch of the Bank of Madras. The Bank of Bengal had no branches prior to the proposal to transfer Government business to the Bank in 1861-62, but no less than 18 branches were established before 1868.
(4) The management of the Public Debt will continue to be conducted by the Bank for a specified remuneration.
(5) The Bank is entitled to transfer its funds through currency free of charge, and Government will discontinue the issue of currency transfers or supply bills to the public between any two places in which a Local Head Office or a branch of the Imperial Bank is situated. The Bank in return undertakes to give the public every facility for the transfer of money between its Local Headquarters and branches at rates not exceeding such rates as the Controller of the Currency may by special or general direction approve.

" The maximum rates approved by the Controller of the Currency, which are uniform throughout India and Burma, for all telegraphic transfers or drafts issued by the Bank are as follows :—

For amount of Rs.10,000 and over ... 1 anna per cent.
For amount of Rs.1,000 and over but less than Rs.10,000 ... ... 2 annas per cent.
For amount less than Rs.1,000 the rates will be at the discretion of the Bank.

" At the same time, the opportunity was taken to bring the rates for Government currency transfers and supply bills into line with the rates approved for the Bank, the rates previously having ranged from 1 to 2 annas between Treasuries in the same province and from 2 to 4 annas between a Treasury in one province and a Currency Office or Treasury in another province. The maximum rates above mentioned are the rates adopted for Government transfers and supply bills throughout India and Burma.

These, as above explained, are only issued at or on Government Treasuries at places where there is no branch of the Imperial Bank, and are not issued for amounts below Rs.1,000."

For further information with regard to the Imperial Bank of India, I would refer my readers to the article by Mr. H. F. Howard, C.S.I., C.I.E., in the June number of the "Economic Journal."

State Revenue and Expenditure in 1920-21.—It is not surprising that the fluctuations of trade and exchange already outlined reacted most severely on the finances of the Government of India. The budget anticipated a total revenue of 132 crores against an expenditure of 130 crores, *i.e.*, a surplus of 2 crores. *If all budget anticipations had been realised, however, there should have been a surplus at the end of the year of* 10½ *crores, whereas, in point of fact, the year closed with an estimated deficit of* 11¾ *crores.* This reduction of 22 crores in estimated revenue is the more marked on account of the fact that Customs Revenue, due to the enormous imports during the year, showed an improvement of 7½ crores over budget estimates, while taxes on income were expected to be 4 crores in excess of the estimate. The following table taken from the Finance Member's budget speech shows that the deficit on railway income and excess military expenditure alone accounted for a deterioration of 22·8 crores :—

	Crores of Rupees.	Crores of Rupees.
Customs Revenue more	+7·3	—
Railways (inclusive of adjustment for exchange) worse	—	−7·6
Income Tax Revenue more: { Excess Profits, 1½ / Super Tax, 1 / Income Tax, 1½ }	+3·9	—
Military Expenditure more		−15·2
Profits on Wheat Purchases	+0·9	—
Exchange charged to non-commercial revenue heads	—	−2·6
Paper Currency Reserve interest less	—	−1·0
Interest charges on debt more	—	−2·5
Land Revenue less	—	−1·4
Opium Revenue less	—	−0·8
Net Revenue from Posts and Telegraphs less...	—	−0·8
Other variations, representing mainly increases in civil expenditure	—	−2·5
Net variation from Budget	—	−22·3

The railway deficit is almost entirely due to the steady increase in the working expenses of the railways, to which reference is made in Chapter VI of this Report. In spite of the poor monsoon, traffic receipts were well maintained, but the heavy increases of pay given to the railway staffs resulted in railway charges exceeding the estimates and a total deterioration of 7·6 crores.

The provision for military expenditure was 55 crores, whereas the actual expenditure incurred reached 70·2 crores. This excess is almost entirely due to extraordinary expenditure incurred in field operations on the North-West Frontier in the Mahsud country and also in Central and Southern Waziristan.

The loss on exchange was due to the fact that the payments on account of " home charges " had been budgeted for at a rate of 2*s.*, whereas the average rate of exchange during the year was probably about 1*s.* 9*d.*, thus involving the remittance of a much greater sum in rupees than had been anticipated.

Budget for 1921-22.—The Budget introduced by the Honourable the Finance Member on March 1st, 1921, is memorable by the fact that it is the first Budget introduced under the revised Government of India Act, according to the provisions of which proposals for expenditure, with very few exceptions, are subject to the vote of the new Legislative Assembly, with the proviso that the Governor-General in Council is empowered to restore any provision if he can certify that such provision is essential to the discharge of his responsibilities. In view of the slump in trade, decrease in revenue, and a combination of adverse factors, the first Assembly was faced with an unusually difficult task.

The following is a summary of the position based on the speech of the Hon. Mr. W. M. Hailey, Finance Member, introducing the Budget on March 1st last. I would refer my readers who may be specially interested to this lucid exposition of India's finances.*

The estimated expenditure in 1921-22 chargeable to central revenues is 129 crores, against a revenue, on the basis of existing taxation and including provincial contributions of 983 lakhs, which is estimated at 110½ crores. A deficit of 18⅓ crores therefore remains to be met.

Increase in the Customs Tariff.—The first and, from the point of view of the British manufacturer, the most important of the new measures for additional taxation is the increase of Customs duties on imported goods. In Appendix XXVIII, page 329, I have included the new tariff schedules in force from March to December, 1921, which give the actual rate of duty and also the tariff valuation of the various articles. It is hoped that this may be of practical use to British shippers. Briefly, the additional duties imposed fall under four heads :—

(1) The general *ad valorem* duty of 7½ per cent. is increased to 11 per cent., except in the case of matches and of certain articles of luxury, but inclusive of cotton manufactures. The existing cotton excise on piece-goods manufactured in India remains unchanged at 3½ per cent., and the imports of cotton twist and yarn remain free of duty. On the other hand, the concession allowed by the former tariff, by which machinery and stores imported for use in a cotton spinning or weaving mill were admitted free of duty, has been withdrawn, and these articles are now subject to the appropriate duty under the revised schedule. The

* A copy can be seen at the Department of Overseas Trade.

duty of 2½ per cent. on certain articles necessary to India's industrial development, such as machinery, metals, and railway plant, remains unchanged.

(2) The new duty on matches is a specific one of 12 annas per gross boxes, in place of the former *ad valorem* duty of 7½ per cent.

(3) The duties on imported liquors are increased as follows :—

Article.	Old Duty.		Present Duty.	
	Rs.	As.	Rs.	As.
Ale, beer, cider, etc., per gallon ...	—	4½	—	6½
Liqueurs, untested, per gallon ...	14	10	25	—
Liqueurs, tested, per proof gallon ...	11	4	18	12
Perfumed spirits per gallon ...	18	12	30	—
All other spirits per proof gallon ...	11	4	18	12
Wines :				
(*a*) Sparkling per gallon ...	4	6	9	—
(*b*) Other sorts per gallon ...	1	12	4	8

The new rates work out to exactly 3 annas per degree of proof per gallon. The 7½ per cent. duty on denatured spirits used in industry remains unchanged.

(4) The general *ad volerem* duty of 7½ per cent. is raised to 20 per cent. in the case of certain articles of luxury, such as motor-cars, motor-cycles and tyres (excluding lorries), silk piece-goods, fireworks, clocks and watches, musical instruments, cinematograph films, &c., &c.

(5) The import duty on sugar is raised from 10 to 15 per cent.

(6) The duties on tobacco, other than unmanufactured tobacco, are increased by 50 per cent. The new duty on manufactured tobacco is therefore Rs.2-4 per lb., as against Rs.1-8-0, and on cigarettes and cigars it is now 75 per cent. *ad valorem*, as compared with 50 per cent. *ad valorem* under the old tariff.

These increases in the Customs Revenue are estimated to yield 8 crores of rupees. It is proposed to raise the balance of the deficit as follows :—Increased surcharges on railway goods traffic are estimated to provide 5½ crores. Enhanced inland postal rates, as modified by the Assembly, should yield an extra 77 lakhs or so. Advances in the Income Tax and Super-tax will, it is anticipated, provide a further 3¼ crores. The total yield of the additional taxation should be approximately 17½ crores.

APPENDIX I.

TABLE A.

BRITISH IMPORTS. (*See* page 7.)

Value of principal articles imported by sea into British India from the United Kingdom.

—	1913–14	1916–17	1917–18	1918–19	1919–20	1920–21
UNITED KINGDOM.						
Imports therefrom—	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
Apparel	481	454	389	578	741	1,606
Arms, ammunition, etc.	212	213	169	197	258	550
Artificial silk yarn ...	—	—	—	17	146	60
Belting for machinery ...	256	344	510	516	475	1,311
Bobbins	—	—	—	73	177	517
Books and printed matter	315	282	303	324	390	609
Boots and shoes	481	300	157	158	149	570
Building materials ...	520	470	577	223	949	1,804
Carriages and carts ...	116	48	36	47	172	497
Chemicals, etc.	505	869	1,220	1,051	1,222	2,012
China clay	—	166	145	225	88	275
Coal and coke, etc. ...	254	15	17	41	38	58
Cordage and rope ...	39	44	33	25	68	82
Cotton—						
Raw	134	—	—	—	—	737
Twist and yarn ...	2,378	2,293	2,284	2,238	3,536	7,953
Piece goods—						
Grey	16,684	9,929	10,484	9,677	19,239	18,731
White	9,287	8,359	9,295	8,336	15,302	20,879
Coloured, etc. ...	10,224	8,482	9,619	6,842	11,221	30,537
Other manufactures ...	1,261	1,608	1,530	1,295	1,505	3,018
Cutlery	78	57	46	55	106	230
Cycles and parts	222	111	119	83	277	848
Drugs and medicines ...	401	499	354	398	767	1,082
Dyeing and tanning substances	38	234	391	367	552	999
Earthenware and Porcelain	245	150	129	176	251	564
Flax manufactures ...	264	402	234	88	339	588
Glass and glassware ...	175	224	198	206	323	668
Haberdashery and millinery	442	404	326	428	435	1,278
Hardware	1,505	1,223	749	767	2,052	5,262
Instruments, apparatus, etc.	911	845	475	469	1,149	3,929
Ivory	77	95	93	77	224	66
Jewellery, etc.	84	28	18	21	63	187
Jute manufacture ...	95	191	87	51	150	158
Leather, including hides, tanned, etc.	222	212	185	181	366	1,069
Liquors—						
Ale, beer and porter ...	330	246	173	173	340	802
Spirit	515	677	832	1,037	1,477	2,030
Wines	91	113	97	109	261	407

[*Continued next page*]

—	1913–14	1916–17	1917–18	1918–19	1919–20	1920–21
	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
UNITED KINGDOM—*cont.*						
Imports therefrom—*cont.*						
Machinery and millwork	4,639	3,206	2,066	2,139	5,916	17,522
Metals—						
Copper	667	94	33	79	1,568	1,243
Iron	242	430	244	71	283	666
Iron or steel	6,810	3,261	1,947	2,564	8,487	17,851
Lead	120	169	106	115	151	223
Steel	402	351	152	147	1,298	3,736
Others	1,096	312	132	118	2,612	4,361
Motor cars and motor cycles, etc.	724	396	104	78	739	3,847
Oils, mineral	155	211	135	217	261	412
,, vegetable, animal, etc.	142	117	83	18	101	218
Packing, engine and boiler	30	47	59	53	91	43
Paints and colours ...	341	552	405	259	735	1,264
Paper and pasteboard ...	595	738	413	358	877	3,126
Piece-goods of cotton and artificial silk	—	208	106	31	588	971
Pitch, tar and Dammer	59	64	49	49	90	119
Polishes	66	102	102	83	184	388
Provisions	1,007	1,232	288	221	1,154	1,790
Railway plant, etc. ...	6,219	968	311	642	4,093	13,478
Rubber manufacture, including tyres, etc. ...	211	418	465	552	825	1,154
Salt	136	319	108	160	391	359
Ships, parts of	142	63	143	104	276	199
Silk manufacture, including yarns, etc. ...	186	183	88	73	116	249
Soap	457	632	709	613	1,082	1,310
Starch and farina ...	16	70	3	—	31	34
Stationery	332	335	260	311	470	1,267
Sugar	186	135	45	4	183	322
Tallow	82	114	37	5	29	129
Tea-chests	331	365	271	241	333	775
Tobacco	419	729	1,036	1,013	1,357	1,597
Toilet requisites	72	88	84	109	163	305
Toys and requisites for games	112	81	63	55	91	204
Umbrellas	126	86	94	47	90	245
Woollen manufactures, including yarn, etc. ...	1,482	1,083	1,277	1,183	1,365	4,757
Other articles	1,942	1,775	1,822	3,078	4,145	7,948
TOTAL ...	78,388	58,521	54,514	51,338	104,983	204,603

NOTE.—The values are shown in *pounds sterling* converted at the rate of Rs.10 = £1 sterling for the years 1919-20 and 1920-21; and of Rs.15 = £1 for earlier years.

TABLE B.

IMPORTS FROM U.S.A. (*See* page 8.)

Value of principal articles imported by sea from the United States into British India.

——	1913–14	1916–17	1917–18	1918–19	1919–20	1920–21
UNITED STATES. Imports therefrom—	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
Arms, Ammunition and Military stores ...	7	19	17	52	90	66
Boots and shoes	5	46	24	40	212	432
Chemicals	2	57	196	95	107	218
Clocks and watches ...	33	25	13	24	50	98
Cotton piece goods ...	173	204	230	222	471	736
Drugs and medicines ...	31	48	64	105	229	187
Dyeing and tanning substances	—	281	256	341	552	767
Hardware	255	392	507	663	1,329	2,255
Instruments and apparatus	97	135	220	421	809	1,335
Iron and steel	282	1,628	2,241	3,695	5,432	5,199
Machinery and millwork	168	279	655	928	2,798	4,026
Motor cars and cycles, etc.	154	973	360	167	3,091	6,486
Oils, mineral	1,540	2,074	1,621	1,465	5,237	5,300
Paper and pasteboard ...	9	143	135	400	593	874
Provisions and oilman's stores	32	131	371	413	625	712
Railway plant and rolling-stock	2	66	15	26	421	223
Spirit	41	48	62	71	117	126
Tobacco	16	31	12	305	480	1,089
Wood and timber ...	84	137	156	56	148	326
Other articles	262	587	722	1,277	2,376	4,843
TOTAL ...	3,193	7,304	7,877	10,766	25,167	35,298

TABLE C.

IMPORTS FROM JAPAN. (*See* page 9.)

Value of principal articles imported by sea into British India from Japan.

——	1913–14	1916–17	1917–18	1918–19	1919–20	1920–21
JAPAN. Imports therefrom—	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
Ale, beer, and porter ...	1	76	145	247	341	74
Apparel	68	135	143	211	442	309
Brass, bronze, etc. ...	1	156	317	597	357	453
Brushes and brooms ...	4	19	25	18	36	21
Buttons of all sorts ...	—	127	80	63	150	147
Camphor	83	163	221	89	124	194
Cement	—	70	39	113	97	4
Chemicals	10	216	371	404	191	135
Coal, coke, etc.	84	1	—	15	2	36
Copper	274	46	351	264	309	74
Cotton hosiery	556	850	611	491	1,224	1,393
,, piece goods ...	118	1,621	2,179	7,097	3,686	8,371

[*Continued next page.*]

——	1913-14	1916-17	1917-18	1918-19	1919-20	1920-21
	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
JAPAN—*cont.*						
Imports therefrom—*cont.*						
Cotton yarn	93	354	553	3,553	607	4,899
,, other manufactures	36	217	106	153	378	265
Cutlery	—	23	31	29	88	47
Drugs and medicines (other than camphor)	25	37	45	81	101	92
Earthenware and porcelain	42	127	96	163	407	185
Furniture and cabinetware	6	16	23	31	28	36
Glass and glassware—						
Bangles	1	243	192	164	347	436
Beads and false pearls	40	92	109	82	164	238
Bottles and phials ...	21	97	168	93	191	243
Funnels, globes, etc. ...	6	60	112	64	162	110
Others	37	107	178	149	406	284
Haberdashery and millinery	101	173	107	124	217	298
Hardware	41	333	455	618	745	758
Instruments, etc. ...	7	82	309	324	124	181
Iron or steel	—	58	227	663	39	50
Leather	3	22	18	22	54	42
Machinery and millwork	10	89	134	164	85	121
Matches	260	604	1,346	1,042	1,873	1,296
Paints and painters' materials	—	21	82	329	80	23
Paper and pasteboard ...	11	198	392	465	271	415
Provisions and oilman's stores	13	24	37	32	51	39
Rubber manufactures ...	—	55	28	46	21	23
Silk, raw	7	18	25	60	—	62
Silk, manufactures, including yarn, etc. ...	966	957	1,063	1,360	3,300	2,959
Soap	3	15	18	11	15	13
Spices, ginger	24	21	29	5	7	2
Starch and farina ...	—	16	99	25	86	27
Stationery (excluding paper)	20	112	102	92	134	142
Sugar 16 D.S. and above	2	274	109	19	86	7
Tea-chests	7	67	228	303	108	52
Toilet requisites	11	31	44	68	99	76
Toys and requisites for games	34	112	80	105	247	180
Umbrella fittings ...	45	53	50	49	67	92
Wheat flour	2	—	—	—	—	—
Wood—timber	3	171	126	72	102	22
,, manufactures ...	7	23	62	117	145	199
Woollen manufactures (including yarn) ...	1	165	91	222	83	232
Other articles	103	342	809	1,841	1,276	1,073
TOTAL ...	3,187	8,889	12,175	22,349	19,153	26,430

NOTE.—The values are shown in *pounds sterling*, converted at the rate of Rs.10 = £1 sterling for the years 1919-20 and 1920-21, and of Rs.15 = £1 for earlier years.

TABLE D.

IMPORTS FROM GERMANY. (*See* page 10.)

Value of principal articles imported by sea into British India from Germany.

——	1913–14	1916–17	1917–18	1918–19	1919–20	1920–21
GERMANY.						
Imports therefrom—	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
Apparel	104	1	—	—	—	92
Chemicals	84	—	—	—	—	75
Cotton manufactures, including yarn	945	8	2	—	—	93
Cutlery	82	—	—	—	2	76
Dyeing and tanning substances	622	1	—	—	8	1,203
Glass and glassware ...	191	1	—	—	—	203
Haberdashery and millinery	186	2	1	—	—	66
Hardware	482	4	—	—	5	291
Instruments, apparatus, etc.	102	1	—	—	—	81
Liquors	158	2	—	—	—	67
Machinery, etc.	288	1	—	—	—	171
Matches	17	—	—	—	—	8
Metals	2,573	8	—	—	—	864
Oils	216	6	—	—	—	9
Paper and pasteboard ...	183	2	—	—	—	187
Salt	62	—	—	—	—	350
Silk manufactures, including yarn, etc. ...	149	—	—	—	—	167
Sugar	12	—	—	—	—	14
Toys and requisites for games	77	1	—	—	—	47
Woollen manufactures, including yarn, etc. ...	716	10	1	—	1	90
Other articles	1,195	4	3	—	27	592
TOTAL ...	8,444	52	7	—	43	4,748

NOTE.—The values are shown in *pounds sterling*, converted at the rate of Rs.10 = £1 sterling for the years 1919-20 and 1920-21, and of Rs.15 = £1 for earlier years.

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TABLE E.

IMPORTS FROM BELGIUM. (*See* page 11.)

Value of the principal articles imported by sea into British India from Belgium.

——	1913–14	1916–17	1917–18	1918–19	1919–20	1920–21
BELGIUM.						
Imports therefrom—	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
Cotton manufactures, including yarn	502	3	—	—	14	740
Cutlery	12	—	—	—	3	4
Dyeing and tanning substances	90	6	—	—	15	133
Earthenware and porcelain	24	—	—	—	1	27
Glass and glassware ...	129	6	1	—	105	467
Hardware	42	—	—	—	3	41
Machinery and millwork	15	—	—	—	—	74
Matches	14	—	—	—	—	—
Metals—						
Copper	57	—	—	—	—	14
Iron	102	—	—	—	30	175
Iron or steel	430	3	—	—	132	931
Steel	702	1	—	—	237	1,317
Paper and pasteboard ...	36	2	2	—	2	219
Railway plant, etc. ...	50	—	—	—	2	64
Other articles	633	5	1	4	154	1,120
TOTAL ...	2,838	26	4	4	698	5,326

NOTE.—The values are shown in *pounds sterling*, converted at the rate of Rs.10 = £1 sterling for the years 1919-20 and 1920-21, and of Rs.15 = £1 for earlier years.

APPENDIX II.

Mineral Production. (*See* page 24.)

From *Records of the Geological Survey of India, Vol. LI.*

Table A.

Total Value of Minerals for which Returns of Production are available for the years 1918 *and* 1919.*

—	1918. (Rupee =1*s.* 4*d.*)	1919. (Rupee= 2*s.*)	Increase.	Decrease.	Variation per cent.
	£	£	£	£	
Coal	6,017,215	10,119,256	4,102,041	—	+ 68·1
Gold	2,060,152	2,256,039	195,887	—	+ 9·5
Petroleum	1,131,904	1,834,308	702,404	—	+ 62
Salt	1,645,195	1,823,522	178,327	—	+ 10·8
Manganese†	1,481,735	1,546,330	64,595	—	+ 4·36
Mica†	625,271	863,448	238,177	—	+ 38·1
Lead and Lead-ore ...	450,477	668,642	218,165	—	+ 48·32
Tungsten-ore... ...	726,681	539,544	—	187,137	— 25·75
Silver	295,696	487,246	191,550	—	+ 64·72
Saltpetre	589,190	471,247	—	117,943	— 20
Building materials ...	263,290	436,183	172,893	—	+ 65·7
Tin and Tin-ore ...	134,635	241,150	106,515	—	+ 79·1
Ruby, Sapphire & Spinel	40,310	108,087	67,777	—	+ 168·1
Chromite	52,063	88,724	36,661	—	+ 70·4
Jadestone†	124,113	87,102	—	37,011	— 29·8
Monazite	58,819	60,712	1,893	—	+ 3·2
Copper-ore	4,053	52,416	48,363	—	+1193·2
Clay	14,084	49,960	35,876	—	+ 254·7
Iron-ore	41,105	45,887	4,782	—	+ 11·6
Diamond	2,625	20,825	18,200	—	+ 693·3
Magnesite	4,641	19,728	15,087	—	+ 325·08
Steatite	7,708	6,498	—	1,210	— 15·7
Corundum	4,108	5,347	1,239	—	+ 30·16
Alum	960	4,800	3,840	—	+ 400
Ochre	2,890	3,600	710	—	+ 24·6
Gypsum	1,139	2,869	1,730	—	+ 151·9
Bauxite	894	1,934	1,040	—	+ 116·4
Asbestos	965	1,656	691	—	+ 71·6
Barytes	2,948	1,561	—	1,387	— 47·05
Antimony	6	203	197	—	—
Graphite	361	819	458	—	+ 126·9
Amber	87	616	529	—	+ 608
Apatite	3,400	500	—	2,900	— 85·3
Molybdenite	62	101	39	—	+ 63
Potash	46	42	—	4	— 8·7
Samarskite	4	10	6	—	+ 150
Aquamarine	180	—	—	180	—
Platinum	2	—	—	2	—
Total... ...	15,789,014	21,850,912	6,409,672	347,774	+ 38·39
			+6,061,898		

* The increases or decreases are shown in sterling values, taking the rupee at 1*s.* 4*d.* for 1918 and at 2*s.* for 1919. (The true average for 1918 was 1*s.* 5$\frac{11}{16}$*d.* and for 1919, 1*s.* 8$\frac{31}{32}$*d.*)

† Export values.

TABLE B. (*See* page 24.)

1.—*Output of the Gondwana Coal Fields for the years* 1918 *and* 1919.

	1918.		1919.	
	Tons.	Per cent. of Indian Total.	Tons.	Per cent. of Indian Total.
Bengal, Bihar and Orissa—				
Daltonganj	81,816	·39	63,250	·28
Giridih	846,592	4·09	950,045	4·20
Jainti	140,373	·68	154,850	·69
Jharia	10,952,010	52·85	12,145,917	53·68
Bokaro-Ramgarh	541,977	2·62	722,682	3·19
Raniganj	6,368,519	30·74	6,815,126	30·11
Sambalpur(Hingir-Rampur)	51,038	·25	45,574	·20
Central India—				
Umaria	199,975	·96	182,141	·80
Central Provinces—				
Ballarpur	135,375	·65	126,366	·56
Pench Valley	267,303	1·29	285,356	1·26
Mohpani	78,792	·38	85,299	·38
Hyderabad—				
Singareni	659,122	3·18	662,196	2·93
Total ...	20,322,892	98·08	22,238,802	98·28

2.—*Output of Tertiary Coal Fields for the years* 1918 *and* 1919.

	1918.		1919.	
	Tons.	Per cent. of Indian Total.	Tons.	Per cent. of Indian Total.
Assam—				
Makum	267,749	1·42	259,652	1·29
Naga Hills	24,299		29,941	
Sibsagar	1,327		1,541	
Khasi and Jaintia Hills ...	609		600	
Baluchistan—				
Khost	29,600	·21	23,703	·16
Sor Range	13,525		10,625	
North-West Frontier Province	240		20	
Burma	—		1,500	
Punjab—				
Jhelum	39,651	·24	35,845	·21
Mianwal	5,152		5,822	
Shahpur	5,615		5,226	
Rajputana—				
Bikanir	11.334	·05	14,760	·06
Total ...	399,601	1·92	389,235	1·72

TABLE C. (*See* page 25.)

Quantity and Value of Petroleum produced in India during 1918 *and* 1919.

	1918.			1919.		
	Quantity.	Value. (Rupee=1*s.* 4*d.*)		Quantity.	Value. (Rupee=2*s.*)	
	Gallons.	Rs.	£	Gallons.	Rs.	£
Burma—						
Akyab ...	10,821	3,122	208	10,718	3,092	309·2
Kyaukpyu ...	46,598	22,305	1,487	43,944	22,865	2,286·5
Yenangyaung Field.	203,638,043	1,17,57,392	783,826	190,322,077	1,09,88,797	1,098,879·7
Singu Field ...	61,035,972	35,24,016	234,934	93,626,506	54,05,802	540,580·2
Yenangyat Field.	4,739,587	2,63,310	17,554	4,123,387	2,32,828	23,282·8
Minbu ...	4,826,735	6,03,342	40,223	4,423,361	8,29,380	82,938
Thayetmyo ...	63,000	7,900	527	113,784	14,223	1,422·3
Upper Chindwin.	473,800	35,535	2,369	1,085,030	81,377	8,137·7
Assam—						
Digboi (Lakhimpur).	5,425,580	2,68,453	17,897	5,242,617	2,59,400	25,940
Badarpur ...	5,574,068	4,18,055	27,870	6,546,062	4,90,953	49,095·3
Punjab—						
Attock ...	750,000	750,000	5,000	113,360	14,170	1,417
Miarwali ...	807	129	9	970	191	19·1
Total ...	286,585,011	1,69,78,559	1,131,904	305,651,816	1,83,43,078	1,834,307·8

TABLE D.

Production of Lead and Silver Ore during 1918 *and* 1919. (*See* page 26.)

—	1918.					1919.				
	Quantity.	Value. (Rupee = 1*s.* 4*d.*)				Quantity.	Value. (Rupee = 2*s.*)			
	Lead-ore and slag.	Lead-ore and lead.		Silver.		Lead-ore and slag.	Lead-ore and lead.		Silver.	
	Tons.	Rs.	£	Rs.	£	Tons.	Rs.	£	Rs.	£
Burma—										
Northern Shan States.	50,679 (ore)	61,97,478*	413,165	41,50,793	276,720	67,816 (ore)	66,56,300**	665,630	48,62,113	486,211·3
	2,042 (slag)	2,69,040†	17,936	26,388	1,759	96 (slag)	12,250††	1,225	754	75·4
	9,254 (gossan flux)	1,61,070‡	10,738	83,675	5,578	1,124 (gossan flux)	12,950‡‡	1,295	7,958	795·8
	425 (secondaries)	1,24,254§	8,284	1,73,025	11,535	2 (copper ore)	—	—	94	9·4
Southern Shan States.	117·05	4,865	324	—	—	125·61	4,466	446·6	—	—
Central Provinces—										
Drug	3	450	30	—	—	2·5	450	45	—	—
Mysore—										
Chitaldrug ...	·03	‖	—	—	—	—	—	—	—	—
Total ...	62,520·08	67,57,157	450,477	44,33,881¶	295,592	69,166·11	66,86,416	668,641·6	48,70,919§§	487,091·9

* Value of 17,507·34 tons of lead extracted.
† Value of 760·18 tons of lead extracted.
‡ Value of 376·40 tons of lead extracted.
§ Value of 351·03 tons of lead extracted.
‖ Value not returned.
¶ Value of 1,970,614 ozs. of silver extracted.
** Value of 19,018·06 tons of lead extracted.
†† Value of 34·98 tons of lead extracted.
‡‡ Value of 37·07 tons of lead extracted.
§§ Value of 2,164,853·68 ozs. of silver extracted.

APPENDIX III. (*See* page 28.)

EXTRACT FROM THE "INDIAN FORESTER" OF FEBRUARY, 1921, OUTLINING THE SCHEME FOR THE NEW FOREST RESEARCH INSTITUTE AT DEHRA DUN.

We think it timely to place before our readers some account of the expansion of the present Research Institute and of the shape which this expansion is taking, since the preliminary arrangements for the new organisation are now well in hand.

The causes which led up to the proposal and the proposal itself are dealt with in Despatch No. 495 of 12th December, 1919, from the Government of India to the Secretary of State. The following extracts from the despatch are of interest:—

"We have the honour to invite a reference to our Finance Department telegram of the 29th July last, in which we foreshadowed the submission of a comprehensive scheme for the expansion of the Forest Research Institute at Dehra Dun. The existing institute was established in accordance with the sanction conveyed in Lord Morley's Revenue Despatch No. 61, dated 23rd March, 1906; its scope was extended in 1911 and in 1915. Results of practical value are, of necessity, slow of attainment in dealing with forest crops; nevertheless a substantial foundation has been laid and creditable results have been obtained both in the scientific and applied branches.

"We have long recognised the limitations of the institute and been convinced of the necessity for expansion, and we have been strengthened in this conviction by the Report of the Industrial Commission, which lays special stress on the necessity for its development in order to meet the rapidly increasing demands of the country. In paragraph 63 of that Report the equipment of the institute is described as wholly insufficient, and the necessity for increasing the number of research officers is pointed out. The requirements of forest education are also hampered by the limited accommodation at present available, and extension in this direction is also necessary.

"It has not been possible, during the war, to provide the necessary laboratory equipment and staff, but, in view of the rapid developments that have recently taken place in the utilisation of the forest resources of the Indian Empire—all tending towards rendering the country less dependent upon foreign sources of supply—and the unique opportunities, which now present themselves, of developing forest industries and of finding uses for hitherto little known products, we consider it of special importance that action should be taken, without further loss of time, to make provision for present and future requirements. Large commercial and industrial interests are involved; the State forests cover 251,512 square miles, the net revenue has risen from Rs.74 lakhs in 1892-93 to Rs.150 lakhs in 1912-13 and to Rs.210 lakhs in 1917-18, and we consider that these increases, large as they are, are capable of very great expansion. Our expenditure on research and education during 1917-18 amounted to less than 1 per cent. of the surplus. This appears to us to be wholly inadequate; the greater part of our forest properties are undeveloped, and we have no hesitation, therefore, in putting forward proposals which will permit of the functions of the institute being more correctly proportioned to the importance of the issues at stake.

"We have considered the possibility of decentralising forest research, and have consulted local Governments in this matter. In connection with the Function Committee's report, the necessity for maintaining research institutes under the Central Government has been accepted, and though local Governments, generally, have urged the acceptance of the principle that in matters of special and local interest they should be free to provide for and carry out research, there is unanimity of opinion as to the necessity for a central institution to deal with the more strictly scientific portion of research, for the general guidance and co-ordination of

investigation, and for the collation and distribution of information and the publication of results. We are completely in agreement with this view, which is in the interest of rapid development and follows, we understand, the practice in the United States.

* * * * * *

"It will be seen that we do not propose to increase the number of the existing main divisions of the present Research Institute comprising Sylvicultural, Botanical, Zoological, Economic and Chemical branches, but that each will be sub-divided into a number of sections manned by experts under the general control of the head of each branch.

"*Sylvicultural branch.*—The present staff is composed of a Sylviculturist (Imperial) and two Indian assistants. Although research into sylviculture will also be carried on in some provinces, we consider that the importance of this branch for research and statistical purposes should be strengthened by the addition of two assistants (Imperial). We are impressed with the necessity for improving our sylvicultural knowledge and for applying it, through working plans, to more modern and concentrated methods of treatment. We propose to retain the two posts of Indian assistants, one in the upper and the other in the lower class.

"*Botanical branch.*—The existing staff consists of a forest botanist and two Indian assistants. We propose to divide this branch into three sections dealing with Systematic Botany, Œcology and Mycology, each under an officer of Imperial status. The first two of these posts will be filled by forest officers, but it will probably be necessary to go outside the Department to obtain the services of a mycologist. The existing posts held by Indian assistants (upper grade) will be retained and a third post of assistant (lower grade) will be added, so that each section may be provided with an Indian assistant.

"*Zoological branch.*—This is staffed at present by a forest zoologist and two Indian assistants, one in the upper and one in the lower grade. Our knowledge of forest insect pests is still elementary, but it is sufficient to indicate that they are an important factor to be reckoned with in all stages of forest management and utilization, and may even determine the degree of intensity or concentration of treatment and exploitation. We therefore consider that our zoological branch should be fully equipped to deal with the main problems of forest zoology, and we propose to employ a forest zoologist and four regional zoologists, *i.e.*, officers who, though attached to the Institute, will conduct researches in different parts of India. It may not be immediately possible to obtain forest officers to fill these five posts, but it is essential that officers employed on this work should have good knowledge of forestry, and we therefore intend that the posts should ultimately be filled by recruits to the Imperial Service who have undergone a special course on the conclusion of the period of ordinary training. As, however, some years will have elapsed before it is possible to fill the posts in the above manner, we consider it desirable to employ, at once and as a temporary measure, a systematist, to be located at Dehra Dun, and thus to enable the existing zoologist to devote more time to touring and field work than is at present possible. It is intended that one of the four posts of regional zoologist shall not be filled while the systematist is employed. Each superior officer will have the services of an Indian assistant.

"*Economic branch.*—This important branch is at present in charge of a forest economist aided by an assistant economist, both of whom are Imperial officers. As the development of our resources, and consequently of our revenues, is mainly dependent, at any rate immediately, on the activities of this branch, we attach special importance to its expansion. We propose to retain the two officers already employed, placing the economist at the head of the branch, and to add permanently a wood technologist and minor produce expert, both to be ordinarily recruited from the Imperial staff. We have, however, at present no officer with the

requisite knowledge and training to undertake the duties of the former post, and though we hold that it should be filled permanently by a forest officer we must, as this class of investigation is of pressing urgency, employ a trained expert temporarily until it is possible to provide a forest officer with the necessary training. Our cellulose expert is only a part-time adviser. The importance of developing the paper-pulp resources of the Empire justifies the retention of his whole-time services for a period of five years, which, as at present advised, we consider will be a sufficiently long period to enable him to do all the investigation required. Similarly we consider that five years should be sufficiently long for the retention of a tannin expert. In this post we propose to employ Mr. Pilgrim, who is already in our temporary employment. The power plant and machinery will necessitate the employment of an engineer mechanic and an expert wood worker.

"*Chemical branch.*—We desire more definitely to divide the work of this branch according to the main lines on which investigations are to proceed, and we therefore propose to place the Forest Chemist in general charge of the branch and to add biological and distillation chemists. Each officer will require the help of an Indian assistant. This branch can conveniently be recruited from the proposed chemical service if constituted.

"The above proposal involves an increase in the number of Imperial Forest Service officers employed at the Institute from 6 to 11, and eventually perhaps 15, if it is found possible to obtain officers with the required training to undertake the duties of the regional zoologists. The mycologist, the three chemists, the pulp and tan experts (temporary) will not be forest officers.

"Our proposals necessarily allow for the provision of adequate laboratory and workshop equipment. In your telegram of the 4th September, 1919, you have sanctioned the deputation of Mr. Riatt, our cellulose expert, to England with a view to obtaining special plant for investigation of the problem of utilizing the enormous quantities of grass, bamboos and other materials available for the manufacture of paper-pulp. In our telegram of the 9th September, 1919, we also asked your sanction to the deputation of Mr. R. S. Pearson, Forest Economist, in interruption of his leave, to procure laboratory and workshop equipment from America and England. We estimate the total cost of our requirements for the above equipment, including the necessary buildings, at Rs.4,00,000, and whatever your decision may be on our proposals regarding the large scheme of expansion, the plant is urgently necessary for research that is possible under existing conditions: we have therefore made a grant of Rs.3,00,000, to be utilized during the current financial year for this purpose.

"In connection with the necessity for expansion and the best means to be adopted to give effect to it, it has been brought to our notice, and emphasized by the Board of Forestry at its triennial meeting in March last, that the existing site is inadequate for immediate requirements and will allow only of inadequate expansion in future. The existing estate covers 47·8 acres and provides accommodation for the main research building, laboratories, small workshops, three residences, a hostel and a playing field for students. It would be possible to acquire an area of 29·7 acres adjacent to the present site, but there is no possibility of further extension in this locality. Difficulty is already experienced in housing the existing staff, as Derha Dun is a rapidly growing town and an important cantonment in which house accommodation is below requirements. We have therefore been forced to consider the provision of house accommodation as part of the scheme of expansion. We are also faced with the necessity of providing accommodation for the increasing number of provincial service students. But even if it were possible to erect the buildings now required for research and residential purposes on an area of 77·5 acres and also to improve a water supply which it is stated would be insufficient for the increased staff and work connected with it, we should still have no room for future expansion

and no provision could be made for those experimental and demonstration areas which we consider of special importance in connection with an institute depending so largely on field work for its results, both in education and research. The transfer of the Research Institute to a more central locality was discussed by the last Board of Forestry and has received our consideration, but no better centre can be found. Dehra Dun offers certain climatic and other advantages for educational, research and practical work both in the plains and the hills, while we consider it advisable to continue the traditions already established there as the main centre of our scientific and educational activities in forest work. We have accordingly decided to retain the Research Institute at Dehra Dun and have, after very careful consideration, selected a site of about 1,300 acres, at a distance of four miles from the town, with a view to providing, in addition to the requirements of the main buildings, workshops and residences, ample space for the necessary field work and for the future expansion of staff and equipment which we feel certain will take place. The cost of acquisition of the land for the new site is estimated at Rs.4,80,000.

"While 1,000 acres would be sufficient for this scheme, we propose to take the opportunity of simultaneously acquiring a further area of 200 acres for the following reasons. It is highly probable that the Chemical Service Committee, the appointment of which was sanctioned in your Despatch No. 86 (Revenue), dated 25th July, 1919, will recommend the creation of one or more research institutes. The Industrial Commission, in paragraph 121 of their report, definitely contemplated the probability of a Central Research Institute being located at Dehra Dun where the presence of the Forest Research Institute will tend to attract other institutions for research work, thus creating a scientific centre with an atmosphere favourable to research. We consider that the rapid appreciation of land value at Dehra Dun fully justifies us in making immediate provisional arrangements for acquiring the necessary site.

"The total outlay on the acquisition of a new site, the erection of the necessary buildings and the provision of workshop and laboratory equipment is estimated at approximately Rs.30,58,000 distributed as follows:—

	Rs.
1. Acquisition of 1,200 acres of land at Rs.400 per acre ...	4,80,000
2. Plant, equipment and buildings for laboratories and workshops	4,00,000
3. Erection of new Forest Research Institute main building	10,00,000
4. Quarters for 60 Provincial Forest Service students (30 to be taken annually for a two-years' course)	1,50,000
5. Residences for 22 Imperial officers at an average cost of Rs.19,000 each	4,18,000
6. Residences for 16 Provincial Forest Service officers at an average cost of Rs.10,000 each	1,60,000
7. Clerks' quarters	1,00,000
8. Menials' quarters	50,000
9. Field assistants' quarters 10 at Rs.5,000 each	50,000
10. Roads, water-supply, laying out and contingencies ...	2,50,000
Total	30,58,000

"This sum represents only about one-seventh of the net revenue of the Indian forests for the year 1917-18. We do not consider the amount by any means excessive, and believe that it will be money well spent in expediting the development of our vast forest resources."

This big scheme was sanctioned in a telegram from the Secretary of State on 25th February, 1920. Since then, possession has been taken of the land which is very well situated from two to four miles west of Dehra and to the north of the Chakrata road. A special Works Division

has been formed under the Public Works Department, Delhi Province, to deal with the project and possibly with others of a similar nature which are in the air, and the Department is fortunate in that the executive engineer is the officer under whose direction the present Research Institute was erected and who is therefore fully conversant with our needs.

APPENDIX IV. (*See* page 36.)

LAC AND SHELLAC.

Introduction to the Report on Lac and Shellac by Messrs. Lindsay and Harlow. 1921.

The lac industry has passed through many developments and has experienced many turns of fortune. From ancient days lac-dye was held in high esteem for its bright red colour, and the name still lingers as Crimson "lake." Two generations ago, however, it began to yield place to vegetable and chemical substitutes, and, within the space of a few years, the trade had dwindled to nothing. In 1868-9 the exports from India were valued at nearly eight lakhs of rupees; ten years later, they had diminished by one-half in volume, and their value stood at only two lakhs. Luckily the value once attached to the dye passed with interest to its resinous by-product lac, which has been in demand since early days for varnishes and polishes, and during the current century for other purposes also, such as gramophone records and the manufacture of electrical apparatus. In 1888-9, when exports of the dye had practically ceased, the exports of shellac, which is lac manufactured in flake or "shell" form, were valued at nearly thirty-two lakhs of rupees. Ten years later the value of the trade had risen to over seventy lakhs, and ten years later again, in 1908-9, a total of nearly two and a half crores was reached.

The history of the trade is not, however, one of steady progress, for it has always been liable to serious fluctuations of price. The reasons will be given later in some detail. For the present, it will suffice to remark that the lac industry is very widespread in India, which is practically the only source of supply; that cultivation is everywhere in the hands of village labourers, of little education and scanty means, who neglect the crop when prices are low and are too often tempted, when prices rise, to strip their trees of the brood-lac on which subsequent production depends; and that, as a result of these and other factors, while foreign markets can be quickly glutted, they are nervous of a shortage at their only base of supplies; and prices oscillate violently in consequence. It is moreover an interesting feature of the trade that the London and Calcutta prices follow closely, in inverse, any important variations in the quantities stored in London warehouses; for such variations afford a safe index to the strength or weakness of the demand.

On the outbreak of war, London stocks had attained the very high figure of nearly 100,000 cases, and the price was only 61*s.* per cwt. Normal commercial demands were cut off, and at first the military demand for shellac for the inner coating to shells and for electrical and other fittings, was not of itself sufficient to stimulate the trade. By August, 1915, London stocks and prices were much what they had been the year before, and it was not until 1916 that stocks were reduced; on the 1st December of that year they stood at 56,000 cases, while the price had risen to 139*s.*

By this time, the military demands for shellac on account of Great Britain and the Allies had increased; and, in view of the serious rise of prices in London, measures of control became necessary. In December,

1916, a delivery price of Rs.42 per maund for Government shellac f.o.b. Calcutta was agreed to at a conference between Government and the principal Calcutta shippers. Open market prices in Calcutta were more than double that rate, and the loss on each Government consignment was made good by the shipper on his sales to foreign consumers.

Although, throughout the period of control, Calcutta prices remained fairly constant between Rs.90 and Rs.100 per maund, the London price steadily increased from 144*s.* in January, 1917, to the enormous figure of 450*s.* per cwt. in April, 1918, by which time the stocks had declined from 54,000 to 18,000 cases. Thereafter supplies improved slightly, and by December, 1918, the price had fallen to 320*s.* These prices, of course, represented the rates which the private consumer in London was willing to give against declining stocks with no near prospects of replenishment. The Ministry of Munitions had throughout secured its supplies at the Calcutta price of Rs.42 per maund, plus the usual freight and handling charges.

In December, 1918, war control came to an end and the reversion to normal conditions began. Although foreign markets were starved of lac, it was naturally some time before the various manufacturing industries recovered sufficiently to stimulate the demand. Moreover, Government was known to possess considerable stocks, and this knowledge depressed all markets. The London market fell from 303*s.* in January, 1919, to 205*s.* in April. Subsequently there was a recovery as the various industries consuming shellac awoke to their former activities. From that month London prices rose steadily again, the rise being accentuated by poor crops and short supplies in India during that year. Early in December the price was 570*s.*, and in January, 1920, it touched 880*s.* With every indication of a bumper crop coming forward, prices have since declined. There is no doubt that they had reached an unhealthy level, and all in India who have the true interests of the industry at heart are anxious for a reversion to normal levels and normal trade conditions.

From the standpoint of May, 1920, one may review the present position briefly as follows:—

The war has naturally altered both the value and the direction of India's lac trade. During 1912, a typical pre-war year, the total exports stood at 254,000 cases. The principal customers were:—

	Cases.
The United Kingdom taking	50,000
The United States taking	111,000
Germany, Holland and Austria taking	63,500
France taking	16,500

During 1919, a year when the crops were poor and freight space still short, the total exports amounted to 205,000 cases.

Germany and Holland took only 450 cases direct from India, and the principal customers have now become:—

	Cases.
The United Kingdom taking	56,000
The United States taking	139,000
France taking	5,450
Japan taking on transit for the western ports of America	600

The 1920 crop prospects are good, but foreign consumers are buying freely and the reduction in the German demand is not noticed. No satisfactory substitute has appeared on British or foreign markets, even under war compulsion. In short, all foreign conditions are favourable to the industry of which India holds what is virtually a world's monopoly.

No monopoly in the world, however, can be considered permanently safe. The greater its value, the greater the inducement to the manufacture of rival products. The importance of lac to many manufacturing industries of the West, and its present high value, expose it to serious risks of attack. Unfortunately, also, the industry is encrusted with local prejudice and handicapped by unscientific methods, and is widely

scattered over India. The principal districts of production alone, where cultivation is concentrated, cover a greater total area than that of the British Isles. The propagation and collection of lac are still primitive and uneconomic, manufacture is careless, adulteration rife. Prices fluctuate seriously from season to season; and, in the absence of authoritative reports on crop conditions, speculation flourishes. A wider knowledge of scientific methods and a closer organisation are necessary to stabilise the trade.

APPENDIX V. (*See* page 52.)

REPORT ON INDIA'S NATURAL RESOURCES FOR DRUGS BY OFFICIATING DIRECTOR, GEOLOGICAL SURVEY OF INDIA.

The following Report has been compiled from La Touch's "Bibliography of Indian Minerals" and from information in the Records, Memoirs and files of the Geological Survey of India. I have omitted occurrences of mere academic interest and confined myself to deposits which appear to have some economic importance and to warrant further examination. If the recent rise in price of drugs be greater in proportion than the rise in cost of labour and of general mining development, several mineral deposits which were formerly below the limit of remunerative development might now be above it.

ACIDUM ARSENIOSUM (arsenious anhydride) can be prepared by roasting any common arsenic ore. Most of the arsenic consumed in India is imported from China through Burma. The natural occurrences so far known in India are as follows:—

(i) *Darjeeling.*—This locality is between Darjeeling and Kalimpong, 20° S. of W. from the highest summit of Sampthar Hill and about half a mile distant therefrom; it is some 4,000 feet above sea-level. Mallet describes a metalliferous band, exposed for 5 or 6 yards, dipping at 50° towards the N.E. and about 1 foot in thickness. Of this 1 foot about two-thirds were thought to consist of ore, the rest consisting of rusty quartzose schist "which divides the band into two layers, of which the upper is much thicker than the lower. Both consist almost entirely of ore, with but little gangue intermixed." The ore consists of arsenopyrite (sulpharsenide of iron FeS_2FeAS_2) with a considerable proportion of pyrite (FeS_2) and a little chalcopyrite ($Cu_2S.Fe_2S_3$). The percentage of arsenic in the lode has apparently never been estimated, and I propose to have this lode examined further and samples analysed at an early date.

(ii) *Hazaribagh.*—Near Dabur on the Sukri River, and also about a mile S.S.W. of Dhab, occasional lumps of leucopyrite (Fe_3AS_4), several pounds in weight, are found in the mica-bearing pegmatites. This source of arsenic can only be looked upon as a casual one, but it would be none the less a source of profit to mica-miners.

(iii) *Kashmir.*—At a village called Barali in the Bhutna Valley between Gulabgarh and Machel, 3,900 feet above the river, La Touche found a bed of arsenopyrite, which, however, seemed small in extent.

(iv) *Chitral.*—Chitral is the chief source of arsenic for India and has been for many years. No returns of output of these orpiment mines for recent years are available, but in 1905-06 the supply had fallen below 12 tons. The Geological Survey of India hope to commence a systematic survey of Chitral next year, so that more definite information regarding the extent and position

of the deposits will be available in the immediate future. There is little doubt that it is to Chitral we must look in the first place for any increase in India's requirements in arsenic.

Considerable quantities of orpiment are imported into Burma from Western China for use mainly as pigment. The average imports across this frontier between 1914-15 and 1918-19 amounted to 3,731 cwts.

Alumen Purificatum.

Bihar and Orissa.—In the Shahabad district a band of alum shale described as being 10 feet in thickness is exposed at the base of the Kaimur sandstones in small valleys near Rohatasgarh and in the Durguti and Sugia-Koh valleys. The alum is associated with pyrites and sulphate of iron, and has been manufactured in small quantities at Phulwaria, north of Rohtasgarh.

Bombay.—At two places, in Kachh-Mhurr and Chachera Kund, alum used formerly to be manufactured, but the demand having ceased, the industry has disappeared. At Chachera Kund the salt was obtained from a warm spring. At Mhurr, a little to the south of Chachera, the raw material consisted of pyritous shale, in which oxidation was induced by exposing heaps of it to the air for four or five months. These heaps were then spread out and sprinkled with water for 12 days, the result being a white inflorescence, which was collected, boiled with some potash salt, such as saltpetre, in iron pans, in the proportion of 16 of inflorescence to six of the saltpetre; the resulting alum was purified by recrystallisation. Saltpetre was obtained locally from village refuse heaps. The quantity manufactured at Mhurr in the early '60's is said to have been between 28,000 and 35,000 cwt. per annum, but the output in 1872 had declined to 6,000 cwt.

Sind.—Alum is manufactured from pyritous shales by roasting, subsequent lixiviation with water, and crystallisation with the requisite quantity of potash salt, at several places in Western Sind, including the Mahi Nai, at Ranikot; at Billi, in the Kohistan Taluk; and at Shah Hassan, near Trini.

Burma.—Alum shales have been reported to occur near the Yunzalin River (lat. 17°30′: long. 97°40′) and in the Tenasserim River, about 40 miles below Myitta.

Nepal.—Alum exudes from the rocks at many places in the Napalese hills, and is sold for medicinal purposes in the Indian bazaars under the name of *silajit*.

Punjab Salt Range.—Alum has for many years been manufactured at Kalabagh, on the Indus, and Kotki, in the Chichali Pass, where it results from the oxidation of finely disseminated pyrites in shales. These alum shales are 7-10 feet thick at Kalabagh and 25-49 feet at the Chichali Pass, the mineral being extracted by the aid of narrow tortuous passages. The process of manufacture has been described by Daru (Rec. G.S.I., Vol. XL, pp. 265-282). These two localities are at present the most important sources of alum in India. The annual production in 1852 was about 8,600 cwt. at Kalabagh and 7,000 cwt. at Kotki; between 1909 and 1913 the total averaged 6,935 cwt., and between 1914 and 1918, 6,375 cwt. The consumption of alum in India is on the increase, but the extension of railways in this country has enabled the imported material from the United Kingdom to affect adversely the native industry. With a more enlighteed and economic mode of manufacture, there is no reason why this industry should not be established on a firm basis. Other localities in the Salt Range might be found, after experimental exploitation, to be additional sources, such as Dandot, Virgal, and Amb; alum manufacture is, in fact, stated to have been carried on in the two latter places.

Almora.—Between Naini Tal and Khairna, near the village of Jakh, alum is reported in considerable quantities occurring on pyritous shale; it is sold under the name of *sialajit* for medicinal purposes.

Alunite or aluminium sulphite occurs as veins in sulphur at the Sanni mines of Baluchistan.

The possibility of reviving the moribund alum industry in some of the above localities depends so much on local conditions that it is impossible to estimate it in the present report. It might perhaps be worth while calling the attention of local officers, especially of directors of industries, to the matter.

ANTIMONII OXIDIUM, ANTIMONIUM SULPHURATUM, ANTIMONIUM TARTARATUM require for their preparation any common ore of antimony.

Baluchistan.—Stibnite (Sb_2S_3) and valentinite (Sb_2O_3) are reported in abundance in the hills north of Kil'Abdulla between Quetta and Pishin.

Burma.—Stibnite, occasionally oxidised on the surface, is known to occur at the following localities in the Southern Shan States:—Nzeng and Loi Khe in Mong Hsu State, Mong Ing in Keng Tung State, and Hkumpok and Loihsang in Mong Kung State. The same mineral has also been observed at Lebyin in Burma, close to the Southern Shan States boundary. The first locality mentioned above is the largest and most important, but of this Mr. H. C. Jones, who examined all the deposits, expresses doubts as to its economic value.

Another occurrence was examined by Dr. Heron in the extreme south-east of the Amherst district, about 9 miles by path to the south of the frontier police post of Thabyu. The lodes are described as very large, the biggest measuring some 20 feet in thickness and being traceable for over 600 feet. The ore consists of massive aggregates of stibnite, in which superficial oxidation has taken place to a depth of several inches. Dr. Heron expressed the opinion that, with an adequate initial outlay, improved roads, organised transport and proper technical superintendence, these deposits could be worked to commercial advantage.

Nepal.—Tetrahedrite (Cu_3 Sb S_3), containing over 25 per cent. of antimony, is said to occur in considerable quantities not far from Kathmandu in Nepal.

North-West Frontier.—Inferior antimony ore is mined in the Zaimukht Hills, north of Thalm in the Kurram Valley.

Punjab.—Stibnite occurs above the Shigri glacier in Lahaul, and was worked for some years by Colonel Renwick. The locality is 13,500 feet above sea-level, and the ore was transported on the backs of sheep over the Hamta Pass (14,500 feet); mining is possible for only two or three months every year on account of the snow. These deposits are thought to be capable of yielding between 200 and 400 maunds of stibnite per annum.

The most promising locality seems to be that in the Amherst district, and it is probably to this that we should look for future increase in the country's output of antimony. The deposits in Nepal may prove to be of importance, but their development is dependent on political considerations.

BARIUM PEROXIDE.

The presence in India of the carbonate of barium (whiterite), from which the oxide and peroxide can be so easily prepared, has, unfortunately, never been satisfactorily demonstrated, so that the only barium ore available is the intractable sulphate, barytes. Fusion with charcoal at a high temperature is necessary to produce the sulphide, from which both oxides are, with little difficulty, prepared.

Baluchistan.—Concretions of barytes, associated with pyrites, are fairly abundant in the Belemnite shales of Kelate and Las Bola States; Pabni, two days' march from Karachi, is the most accessible locality.

Burma.—Associated with the silver-lead ores of the Bawdwin mines in the Northern Shan States La Touche and Brown found large quantities of barytes, but not *in situ*. Fragments over one foot in diameter were found over a large area, and the occurrence is evidently one worth following up.

A bed of barytes six to seven feet thick was found by Sir H. H. Hayden at Taung-gaung, Mandalay district.

Rewah.—Veins of barytes from one inch to one foot in thickness are known to exist near the village of Bharra on the Mohan River.

Jubbulpore.—A considerable amount of barytes is found associated with the copper lodes of Sleemanabad, Jubbulpore district, but its quality is not good.

Madras.—Barytes in large masses and nodules forms the matrix of the galena formerly mined in the Nallamalai Hills, six miles east of Gazulapalli, but there is no true lode. In Salem, near Alangayam, occurs a network of quartz and barytes veins, varying in thickness from mere stringers to masses several feet across; the percentage of barytes amounts to 30·8.

The most promising locality for further research is probably the Bawdwin mines in Upper Burma. There should be plenty of charcoal available from the Jungle, and the reduction of the sulphate could be carried out on the spot. The occurrence in the Mandalay district should be further examined also.

Bismuth Salicylas and Bismuth Subnitras.

For the preparation of these salts the hydroxide and nitrate of bismuth are required, and can be prepared from native bismuth or from any of the common bismuth ores.

Traces of bismuth have been found in Singhbhum, in the Amherst district of Burma, in Nepal, and in the Kangra district of the Punjab, but the metal or mineral is not present in sufficient quantity to be of any commercial value. More recently native bismuth and oxidised bismuth compounds have been found associated with tin and tungsten in Tavoy, and in two localities, Kanbauk and Nwebauk, they have been described by Brown and Heron as occurring in profitable and notable quantity respectively. During the year 1917, some 5 cwt. of bismuth, valued at £163, was mined in Tavoy. We may reasonably hope for an increased production from this district.

Borax Purificatus.

No undoubted occurrence of borax is known within British Indian territory.

Kashmir.—In the Puga Valley, Rupshu, numerous hot springs yield borax, the deposits of which stretch for about two miles along the banks of the river draining the valley. It occurs in layers two or three inches thick in company with efflorescent sodium chloride and sulphur. For many years it has been imported into India from this locality. The annual production has probably never been much in excess of 4,000 local maunds (probably about 600 cwt.); between 1908 and 1913 it averaged 414 cwt.

Considerable quantities of borax are imported regularly from Tibet and Ladakh on the backs of sheep and goats into the Punjab and United Provinces; a little of this is subsequently exported from Indian ports, chiefly to the United Kingdom. As these exports are a little more than balanced by imports by sea, the consumption in India is slightly greater than the supply from Tibet and Ladakh; the latter averaged 21,700 cwts. annually during the five years 1914-15 to 1918-19.

Hydrargyrum.

Neither native mercury nor any mercury ore is known definitely to occur in India, although vague and doubtful reports are periodically received regarding its occurrence.

Kaolin.

Fuller's earth is obtained at Katni, in the Jubbulpore district, and from Bikanir and Jaisalmer, and Marwar, in Rajputana. The production from Jubbulpore and Marwar during 1918 totalled 1,100 tons.

White China clay is known in Jubbulpore and the Rajmahal Hills, and is used for the manufacture of porcelain in the latter locality. Large quantities of it border the oilfields of Burma, but the deposit contains as much as 60 per cent. of silica and only 25-33 per cent. of kaolin; concentration by levigation has been successful, but it is difficult to remove final traces of the sand. Some years ago samples of kaolins and other clays were sent to the Imperial Institute for examination, when it was found that the former were usually of inferior quality. Amongst other localities where kaolin is known are: the Dora River in the Lakhimpur district, Upper Assam, near Malliari, at the foot of the hills south of the Damuda River, near Colgong, in Bhagalpur, and in many other places. Some deposits near Khanapur in the Belgaum district are now being investigated by Mr. Hallowes; reports so far are favourable, and analyses indicate material of high grade.

Lithii Carbonas.

No occurrence of lithium is at present known in India.

APPENDIX VI.

COMPANIES. (*See* page 65.)

Abstract Statement of companies incorporated in British India and in the States of Mysore and Baroda and registered in the twelve months, April, 1920, to March, 1921, as compared with those in the preceding three years and the pre-war year.

Classification of Companies.	1913–14. (Pre-war year.)		1917–18.		1918–19.		1919–20.		1920–21.	
	Number of Companies.	Aggregate authorised Capital.	Number of Companies.	Aggregate authorised Capital.	Number of Companies.	Aggregate authorised Capital.	Number of Companies.	Aggregate authorised Capital.	Number of Companies.	Aggregate authorised Capital.
		Rs. (1,000).		Rs. (1,000).		Rs. (1,000).		Rs. (1,000).		Rs. (1,000).
Banking, Loan, and Insurance—										
Banking and Loan	80	6,26,14	45	12,50,75	30	47,38	73	24,83,65	106	25,57,95
Insurance	49	1,11,55	1	50,00	3	40,20	18	58,18,00	2	4,50
Trading—										
Navigation	5	85,20	2	9,00	1	4,50,00	9	21,25,00	6	2,15,00
Railways and tramways	6	2,58,00	3	28,00	—	—	—	—	1	3,90,00
Co-operative association	—	—	1	20	1	20	—	—	1	5,00
Shipping, landing, and warehousing	—	—	2	15,00	1	3,00	1	10,00,00	3	20,20
Printing, publishing, and stationery	16	18,20	14	21,30	13	10,19	33	74,08	60	1,71,70
Others	105	52,67,49	99	8,03,62	138	7,33,70	463	75,32,37	493	44,68,88
Mills and Presses—										
Cotton mills	12	83,75	4	82,00	6	3,83,25	40	23,40,75	46	19,45,50
Jute mills	3	55,96	2	1,00,00	—	—	10	5,38,00	1	1,50,00
Mills for wool, silk, hemp, &c. ...	1	1,50	1	1,00	—	—	9	6,13,50	4	46,00
Cotton and jute screws and presses	5	7,20	5	14,00	4	14,25	11	1,88,50	21	2,49,00
Paper mills	2	75	1	20,00	1	14,00	—	—	4	32,00
Rice mills	4	3,96	1	20	3	90,75	18	84,75	22	2,74,73
Flour mills	3	10,50	—	—	—	—	6	38,50	2	10,00
Saw and timber mills	1	1,50	1	2,00	1	2,50	—	—	5	16,20
Other mills and presses	7	11,80	4	1,22,10	6	14,00	24	1,87,00	21	1,46,50
Tea and other Planting Companies—										
Tea	23	51,50	36	1,15,16	29	72,05	77	2,40,15	20	68,65
Coffee and cinchona	—	—	1	3,00	—	—	1	1,00	—	—
Others	4	6,30	6	6,98	5	10,85	14	1,72,82	17	2,43,10

Mining and Quarrying—										
Coal	7	16,95	18	66,50	26	97,25	48	3,11,45	28	2,92,50
Gold	2	19,50	—	—	—	—	—	—	—	—
Others	6	30,00	8	2,33,50	14	86,25	22	21,08,70	18	4,40,75
Land and Building	4	7.00	4	1,01,60	2	6,95	15	8,58,80	28	8,13,20
Breweries	—	—	1	6.88	2	1,72	—	—	—	—
Ice Manufacturing	4	8,70	1	60	—	—	1	1,50	5	26,20
Sugar Manufacture	2	5,05	—	—	3	49,00	5	55,25	13	6,44,00
Companies other than those specified above.	5.	3,03	15	1,67,16	1	6	7	7,80,50	38	13,45,11
Total	356	66,91,53	276	32,20,55	290	21,27,55	(a)905	(a)2,75,53,47	965	1,45,76,67
Share of Bengal	*153*	*5,59,06*	*143*	*11,36,57*	*172*	*8,18,24*	*514*	*1,03,07,28*	*436*	*36,68,29*
„ Madras	*46*	*57,63*	*44*	*44,56*	*35*	*26,34*	*79*	*2,84,88*	*110*	*6,47,78*
„ Bombay	*66*	*6,23,02*	*50*	*19,53,36*	*32*	*10,63,85*	*208*	*1,33,41,43*	*179*	*69,21,74*
„ United Provinces	*16*	*50,35,62*	*5*	*18,90*	*8*	*16,32*	*28*	*11,86,10*	*53*	*8,01,60*
„ Bihar and Orissa	*10*	*16,25*	*2*	*3,50*	*2*	*1,49*	*9*	*59,95*	*15*	*75,85*
„ Punjab	*(b)29*	*(b)3,24,40*	*7*	*13,48*	—	—	*8*	*61,90*	*23*	*1,37,40*
„ Delhi	—	—	*3*	*5,50*	*3*	*26.00*	*14*	*91,80*	*14*	*3,47,70*
„ Burma	*7*	*22,05*	*9*	*32,28*	*15*	*1,45,40*	*16*	*21,05,01*	*55*	*10,24,15*
„ Central Provinces and Berar	*1*	*1,05*	—	—	*1*	*6*	*2*	*3,00*	*6*	*52,50*
„ Assam	*15*	*24,20*	*4*	*7,50*	*12*	*14,85*	*14*	*21,60*	*19*	*36,45*
„ Ajmer and Merwara... ...	*1*	*20*	—	—	*2*	*1,20*	*6*	*55,00*	*3*	*11,00*
„ Coorg	*1*	*50*	—	—	—	—	*1*	*1,27*	*1*	*20*
„ Bangalore (Civil and Military Station).	—	—	*1*	*50*	—	—	—	—	—	—
„ Mysore	*1*	*27,55*	*8*	*4,40*	*8*	*13,80*	*6*	*34,25*	*14*	*5,54,70*
„ Baroda	—	—	—	—	—	—	—	—	*37*	*2,97,31*
Total	*356*	*66,91,53*	*276*	*32.20,55*	*290*	*21,27,55*	*905*	*2,75,53,47*	*965*	*1,45,76,67*

(a) Revised. (b) Includes the figures of Delhi.

NOTE.— Corrections have sometimes to be made from month to month in these statistics on the receipt from local authorities of supplementary figures or of statements of errors discovered in the returns submitted by them. The progressive figures therefore must not be understood as necessarily representing the sum of the atest month's figure and of the progressive figure published in the preceding month.

APPENDIX VII. (*See* page 77.)

Departments of Industry.

Personnel and organisation in the various Provinces, as set out in Notes prepared by the Directors for the Second Conference held at Cawnpore in November, 1920.

Madras.

Headquarters.

(1) Director of Industries.
(2) Headquarters Assistant Director (temporary), who discharges the duties of—
  (*a*) Personal Assistant to the Director; and
  (*b*) Commercial and Industrial Intelligence Officer; he also supervises the compilation of statistics which has recently been transferred to the Director of Industries.
(3) Industrial Engineer (temporary).
(4) Inspector of Industrial Schools (permanent).
(5) Industrial Chemist and Dyeing Expert (permanent); works at present at the Indian Institute of Science, Bangalore, as there is no laboratory for him in Madras.
(6) Chemistry Assistant (permanent).
(7) Leather Expert (permanent).
(8) Weaving Expert (temporary for three years).

2. Each of these officers except the Chemistry Assistant is regarded as the head of a "section" of the Director's office, and certain of the Director's clerks are deputed to work under him. All the clerks are included in one list, so that the promotion of a clerk does not necessarily mean a change of his work. A "general section" is under the Manager (temporary) of the office; this includes an account and despatching branch in which work is done for all sections. Each section is responsible for its own records and registers. Indexes of records are to be maintained in each section in the card index form. A beginning has been made with the establishment of a commercial and industrial library.

District Staff.

3.—(1) Five Assistant Directors of Industries (temporary) with headquarters at Bezwada, Madras, Madura, Bellary, Coimbatore.
(2) 12 Supervisors of Industries.
(3) Mechanics and maistries.

These are responsible for commercial and industrial inquiries; the pumping and boring branch of our work; the inspection of industrial undertakings; the administrative supervision of technical parties such as the peripatetic weaving parties; visits to aided industrial schools; the Assistant Directors act as the local representatives of the Director.

Institutes, factories, etc.

4. The Madras Trades School at Madras provides instruction in mechanical engineering, electric wiring, plumbing, machine drawing and practical mathematics to young men already engaged in engineering workshops or in some similar employment. Machine drawing is also taught in the vernacular to maistries of the wood-working, metal working and building trades. A branch of the Trades School is established at the Perambur Railway works for apprentices employed in those works.

5. Madura Industrial Institute.—The Government have recently sanctioned the re-organisation of this institute so as to provide training in carpentry, cabinet making, fitting, turning, moulding and blacksmithy; a class of motor drivers will also be opened there.

6. School of Arts, Madras.—The School of Arts was transferred to the Department of Industries on 1st October, 1920.

7. Aided Industrial Schools.—Last year, 34 industrial schools were aided by the Government.

8. Orr Works School.—This school was opened on 1st April, 1920, by Messrs. P. Orr and Sons to provide education for the young boys employed in their works. The classes will include practical work in the workshops as well as reading, writing and arithmetic in Tamil.

9. Kerala Soap Institute, Calicut.—Soaps are manufactured in this institute both by the cold process and by boiling. It is proposed to give instruction in it as soon as the new buildings are ready.

10. Minor Industries Laboratory, Coonoor.—Research has been undertaken at Coonoor in connection with jams, inks, adhesives and vinegar.

11. Leather Trades Institute, Madras.—This institute was opened in 1915 and is run partly as a model tannery and school and partly as a research institute.

Bombay.

The only permanent establishment so far sanctioned in this Presidency is a Director of Industries and an office staff costing about Rs.2,100 per mensem. The following temporary arrangements have, however, been made for work in the different branches in the department pending further orders:—

Industrial Engineering Section: Mr. T. S. Dawson, of the Victoria Jubilee Technical Institute, has been assisting the department since March, 1919, in this branch. In the same year Government sanctioned the following temporary staff:—

(*a*) A Deputy Director of Industries;
(*b*) An Industrial Engineer in charge of the Central Store and workshops at Dapuri, in the Poona District;
(*c*) A Mechanical Engineer (now working as Assistant Director of Industries, Ahmedabad);
(*d*) A Manager for the workshop at Dapuri.

Chemical Section.—Mr. A. J. Turner, Head of the Chemistry Branch of the Victoria Jublilee Technical Institute and Dr. A. N. Meldrum of the Gujerat College, Ahmedabad, have been assisting the Department in this branch after Mr. Mackenzie Wallis, R.A.M.C., left. They have each one assistant chemist to work under them. A Manager has lately been appointed for a demonstration case in factory at Anand in Gujerat.

Pottery Section.—The services of the Superintendent of Pottery of the Sir J. J. School of Art, Bombay (Mr. E. R. Fern) have been temporarily placed at the disposal of this department.

Fisheries Section.—A Superintendent of Fisheries (Mr. T. J. Walke) has been working at Karwar.

3. The following proposals for a permanent staff of mechanical engineers have been submitted to Government for sanction:—

(1) One Deputy-Director, to be Head of the Mechanical Engineering Department, having Bombay proper and the neighbourhood in his direct charge.
(2) Five Assistant Directors, one each for Sind (to be designated "Deputy-Director"), Gujerat, Deccan and the Southern Maratha Country, Dapuri, and leave vacancies.
(3) 13 Circle Officers to work under the Deputy-Director of and the Assistant Directors, and
(4) One Workshop Manager, Dapuri.

4. On the chemistry side the appointment of a Deputy-Director of Chemical Research is in contemplation, and Mr Bell, who is at present in

England, is trying to secure a suitable officer. This officer will have an assistant chemist to assist him.

The present Superintendent of Pottery will be transferred permanently to this department and a Manager appointed to supervise the demonstration factory which will shortly come into existence at Kurla in the Thana District.

A trawler has been purchased in England and the services of a marine biologist, a skipper, mate and boatswain have been engaged. These officers will arrive by the end of December next.

5. An Advisory Committee, consisting of the Director as Chairman and 10 members, 7 nominated by Government and 3, one each appointed by the Chamber of Commerce, Bombay, Chamber of Commerce, Karachi, and the Indian Merchants' Chamber and Bureau, Bombay, is assisting the Director.

Bengal.

The department office is divided up into sections A, B, C, D, etc., and each officer runs his own section, keeping and filing his own records in his section. We have not yet all collected into one building and the Accounts Branch of the Office will do the accounts for all branches and the typing will be general for each floor of the building (three floors).

The officers will be able to consult each other as much as they wish unofficially and to carry on their routine work issuing letters over their own designation, but when any fresh scheme is begun or any new departure made, the initial correspondence will issue from the Director of Industries or Deputy-Director of Industries and only when the work in this new connection has been reduced to uniform practice will the officer in immediate charge of the section be allowed to continue it in his own name.

In addition to new references all references to Government or to public bodies will be made by the Director of Industries. The Industrial Intelligence Officer will have power to ask for information from any of the other officers of the Department. The weaving expert will also be allowed to communicate direct with the Circle Officers.

Each officer will make a short report weekly to the Director of Industries of all direct references to Circle Officers or to any of the other officers.

Each officer, Circle Officers excepted, will also see the Director of Industries weekly on a definite day at a definite time to explain fully any new proposals and to report general progress. They will also have power to ask to see the Director at any time.

A library is being built up and a room has been set aside for the use of the public where they may consult any of the books or periodicals in the library and take extracts if they wish.

United Provinces.

All the Industrial and Technical schools have been under the Director of Industries for some time now; and this has been the case with the factory and boiler inspection department and the technical laboratory. But all these have separate office establishments of their own for routine work, though they are under the direct supervision of the office of the Director of Industries. The Office of the Industrial Chemist to Government who is in charge of the technical laboratory has come under the control of the Principal, Research Institute, Cawnpore, from October, 1920. The Principal of the Research Institute has an office of his own and deals directly with the Government.

The office work is subdivided under four sections, namely, Education, Industries, Accounts and Miscellaneous. The education section deals with all matters connected with the different schools. All inquiries relating to industrial matters are dealt with by the industries section. The rest

of the work, excepting the accounts and the budget for the whole department, which is done by the accounts section, is dealt with by the miscellaneous section.

The superior staff of the industrial and technical schools consists of the following:—

(1) Principal, Carpentry School.
(2) Vice-Principal, Carpentry School.
(3) Principal, Arts and Crafts School.
(4) Vice-Principal, Arts and Crafts School.
(5) Principal, Central Weaving Institute.
(6) Principal, Technical School, Lucknow.
(7) Principal, Government Technical School, Jhansi.
(8) Principal, Dyeing School, Cawnpore.
(9) Head Master, Leather Working School, Cawnpore.
(10) Lady Principal, School of Needle Work, Lucknow
(11) Principal, Gorakpur Technical School.
(12) Superintendent, Leather Working School, Meerut.
(13) Honorary Manager, Fabric Printing School, Farrukhabad.

Punjab.

The Department is administered by a Director who is the head of the Department; his papers go through the Financial Secretary, but he is allowed direct access to His Honour the Lieutenant-Governor. The Director of Industries is also Director of Civil Supplies.

The Departmental staff is as below:—

(1) One Assistant Director, Mr. Head, A.M.I.M.E., whose services and advice are at the disposal of all owners of factories or machinery. He has under him six Industrial Surveyors.
(2) Factory Inspector.
(3) Assistant Factory Inspector.
(4) Electrical Inspector. This officer works under the Director of Industries in so far as the administration of the Electricity Act is concerned. For his executive work he is under the orders of the Chief Engineer, Public Works Department, Buildings and Roads Branch.
(5) Tanning Superintendent.
(6) Dyeing Professor, Mr. S. R. Khosla, A.M.S.T., F.C.S. (Manchester).
(7) One Textile Master.
(8) Six Assistant Textile Masters.
(9) Arboriculturist, Mr. G. M. Malik, M.Sc. Ag., engaged in fostering the plantation of mulberry trees for silk worms and kikar trees for tanning industry.
(10) Six Industrial Surveyors.

The Department is also assisted by Divisional Advisory Boards. These Boards are established one in each division, additional Boards are provided for large industrial towns, *e.g.*, Amritsar. The Boards meet once a month. The Boards are consulted by the Government and the Director of Industries; any member is himself allowed to put up a subject for discussion.

The members of the Board are nominated by the local Government.

The number in each Board is limited to six; they are allowed to introduce special members to discuss special subjects; each Board elects its own Vice-Chairman.

Bihar and Orissa.

There is a Director, and a post of a Deputy Director has been sanctioned to which an officer with engineering qualifications has just been appointed. The textile expert to Government was appointed in January, 1918. He was formerly manager of a mill in Bombay for nine years. The Professor of Chemistry at Patna acts as chemical adviser to the

Director.. The Principal of the Bihar School of Engineering, who as such is subordinate to the Director of Public Instruction, also acts as Inspector of Technical Schools. A proposal has been submitted by the local Government to the Government of India and Secretary of State for the appointment of an Inspector of Factories. At present the factories in Bihar and Orissa are inspected by a joint Department which is administratively subordinate to the Government of Bengal. Boiler inspection is also carried on by a joint Department, and no proposal has yet been made for a separate Department for Bihar and Orissa. The Electrical Inspector works under the Public Works Department, but all cases connected with the administration of the Electricity Act are referred to the Director of Industries for his opinion. A personal assistant has recently been sanctioned for the Director, and he will have charge of statistical work and an industrial intelligence bureau. He is not supposed to be a touring officer. No staff has been sanctioned for labour work. A proposal for an Advisory Board of Industries has been submitted to Government, but orders on this have not yet been received. It is proposed that this Board should usually meet in Calcutta.

The control of technical and industrial education has been transferred to the Director with the exception of the two engineering schools—one of which, the Bihar School of Engineering, is at present in existence, and the other, the Orissa School of Engineering, is under construction at Cuttack. Both of these are schools primarily for the education of civil engineering subordinates. There is only one Government Industrial school in the province, which is situated at Rachi. Aided technical schools for the training of mechanical and electrical apprentices are about to be developed at Jamalpur and Jamshedpur. There is one weaving school and four peripatetic parties working under the textile expert, and proposals have been submitted to Government for a cotton experimental and testing station at Ranchi and a silk institute at Bhagalpur.

The office of the Director is at present small. The Director, Deputy Director and the Textile Expert have their headquarters at Ranchi, where the Inspector of Factories is also to be stationed. It is proposed to have only one joint office at this station with a common superintendent and typing and despatching section. There will be separate clerks for each branch. The expert subordinates to the Director will manage their own branches and issue and receive letters in their own names. Matters which require the orders of the Director will be submitted to him with a file and office note, and letters will, if necessary, be issued in his name. . The statistical section of the office has not yet been organised, but it is proposed shortly to take over the compilation of rail and riverborne trade and frontier trade statistics from the Director of Agriculture, while the collection of figures such as mineral production, factory production, and labour statistics would also be undertaken by this section, which will work under the Personal Assistant. In order to maintain touch with the various industrial and commercial centres in the province, an experiment is being made with a system of trade correspondents who write a monthly letter to the Director, giving him information on certain fixed points, *e.g.*, the price of vegetable oil and oil seeds, the price and supply of coal, wagon supply, starting of new industries, etc., etc. Only a few correspondents have at present been arranged, but the system so far has been found to be fairly satisfactory.

Central Provinces.

The administrative head of the Department is the Director. All business carrying the authority of the Department passes through him. He has, to support and help him, an Advisory Board. His office is in the Secretariat and is the controlling office under and through which the offices of the heads of sub-Departments work. The Director himself works personally and directly with the heads of sub-Departments, and communication is usually by means of the spoken or informally written word, official correspondence between the Director and members of his staff being avoided.

2. The Deputy Director is, at present, an officer who is a qualified mechanical engineer, and he joined his appointment on the 1st May, 1920. He is, therefore, in training not as regards his professional knowledge, but with respect to the practical administration of a Department which calls for an acquaintance with local conditions obtainable only within the province.

3. Under the office of the Director, who is ultimately responsible to the Administration for the work of his entire Department, there are the heads of the sub-Departments noted below:—

(i) Electrical Engineer (with laboratory, subordinate staff, and small office);
(ii) Textile Expert (with small office, workshop, Superintendent of Weaving Masters, and teaching staff);
(iii) Inspector of Schools of Handicraft, with office and store, and headmasters of schools and staff of craft instructors;
(iv) Leather Expert (who will have small office and tanning school and staff);
(v) Inspector of Factories, with office, and, under him, the Boiler Inspectors.

4. The Curator of the Museum, an institution which contains a range of economic exhibits (agricultural, mineral, and industrial), is, also, under the Director of Industries; so, also, is the Coin Expert who deals with ancient coins and inscriptions.

Assam.

The Director of Industries in Assam is also the Registrar of Co-operative Societies. There is at present no Deputy-Director or Industrial Engineer under him.

The experts under him are—

(1) Weaving Expert, recruited from Madras as Superintendent of Weaving. He is in charge of the newly established Weaving School at Gauhati for training of demonstrators. Next year two peripatetic parties will be formed. The Superintendent of Weaving has got his office and headquarters at Gauhati. There are at present two teachers in the Weaving School. The Superintendent inspects also the two existing district Weaving Schools at Shillong and Tura.
(2) Superintendent of Sericulture, trained in Japan and formerly in the Agricultural Department. He is in general charge of the Sericultural Station at Titabor. His assistant, recently appointed, will be sent to Pusa for training in bacteriological work. The headquarters of the Superintendent of Sericulture is at Jorhat.
(3) Fishery Officer, trained under Mr. Southwell, Director of Fisheries, Bengal. He has his headquarters at Gauhati. He is in charge of the supply of carp fry to the public in Assam.

As collection and compilation of trade statistics is one of the functions of the Department of Industries in Assam, there is a Trade Inspector and a number of Trade Registrars under the Director.

There is a Boiler Inspector in Assam, but he is not under the Director of Industries; he works under the Public Works Department.

We shall shortly have the School of Handicrafts established. Either the Principal of the school or the Industrial Engineer, when appointed, will inspect the existing industrial schools.

Burma.

The office of Director of Industries, Burma, was only opened in the spring of 1921, with Mr. H. B. Holme, I.C.S., as Director. He also acts as Director of Labour for the province.

APPENDIX VIII. (*See* page 90.)

STATEMENT SHOWING THE IMPORTS INTO BRITISH INDIA AND PRODUCTION IN THE INDIAN MILLS OF COTTON TWIST AND YARN (BY COUNTS) DURING THE OFFICIAL YEAR 1920-21.

Counts.	Imports by sea from Foreign Countries from				Production in Indian Mills.
	United Kingdom.	Japan.	Other Countries.	Total.	
	lbs.	lbs.	lbs.	lbs.	lbs.
Nos. 1–20 ...	391,000	4,511,000	2,689,000	7,591,000	443,471,000
„ 21–30 ...	2,053,000	1,944,000	193,000	4,190,000	199,086,000
„ 31–40 ...	12,636,000	9,346,000	860,000	22,842,000	15,024,000
Above No. 40	3,590,000	1,406,000	24,000	5,020,000	2,067,000
Others ...	4,726,000	2,916,000	49,000	7,691,000	—
Waste ...	—	—	—	—	355,000
Totals ...	23,396,000	20,123,000	3,815,000	47,334,000	660,003,000

APPENDIX IX. (*See* page 90.)

TABLE A.

DETAILED STATEMENT OF THE QUANTITY (IN POUNDS) AND THE COUNTS (OR NUMBERS) OF YARN SPUN.

Grand Total, India (British India and Indian States).

Count or Number.	Twelve Months, April to March.		
	1918–19.	1919–20.	1920–21.
1	1,557,410	796,547	1,482,767
2	4,731,373	3,637,205	3,006,051
3	1,527,532	1,888,948	2,681,287
4	4,107,779	4,208,626	4,323,119
5	721,320	609,720	712,251
6	9,705,687	7,840,903	9,428,390
7	11,224,401	10,382,918	10,225,050
8	9,012,712	4,305,746	4,971,056
9	9,536,687	6,423,414	9,262,920
10	35,194,798	44,093,650	37,850,185
Total, Nos. 1 to 10 ...	87,319,699	84,187,677	83,943,074
11	31,205,338	45,027,340	46,377,420
12	42,760,832	45,517,102	45,055,806
13	19,415,926	16,008,100	19,801,450
14	28,048,652	26,712,850	28,715,688
15	14,881,837	12,828,684	14,806,245
16	42,383,199	41,354,731	39,772,425
17	11,270,153	13,207,581	14,205,196
18	16,992,035	20,726,855	22,897,336
19	5,622,642	6,732,601	7,820,445
20	101,960,066	118,884,143	120,075,315
Total, Nos. 11 to 20 ...	314,540,680	346,999,987	359,527,326

[*Continued on next page.*]

Count or Number.	Twelve Months, April to March.		
	1918-19.	1919-20.	1920-21.
21	37,059,063	38,750,715	45,783,656
22	45,231,465	48,334,846	47,350,789
23	5,894,541	3,849,500	4,299,428
24	47,277,236	40,797,977	49,971,313
25	972,648	1,112,335	1,067,859
26	9,701,418	8,335,666	10,045,886
27	5,055,500	4,461,976	5,757,423
28	8,161,584	6,899,775	9,054,630
29	359,622	465,232	573,901
30	29,491,423	30,978,890	25,180,863
Total, Nos. 21 to 30 ...	189,204,470	183,656,912	199,085,748
31	1,712,252	1,177,370	957,246
32	7,997,596	6,490,463	7,243,688
33	296,994	1,139,111	857,850
34	3,605,883	3,442,951	2,579,896
35	122,724	56,186	39,436
36	592,621	837,945	769,466
37	1,268	4,447	12,151
38	289,921	387,946	349,693
39	—	48	162
40	4,569,959	3,544,328	2,214,831
Total, Nos. 31 to 40	19,189,215	17,080,435	15,024,389
Above 40	4,555,242	3,559,967	2,067,168
Wastes, etc.... ...	231,158	275,295	354,892
GRAND TOTAL	615,040,464	635,760,273	660,002,597

TABLE B. (*See* pages 93 and 98.)

DETAILED STATEMENT OF THE QUANTITY (IN POUNDS AND THEIR EQUIVALENT IN YARDS) AND DESCRIPTION OF WOVEN GOODS PRODUCED IN INDIAN MILLS.

Grand Total India (British India and Indian States).

Description.		Twelve Months, April to March.							
		1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.
Grey and bleached piece-goods :—									
Chadars	pounds	23,672,796	22,796,560	26,054,567	22,008,635	17,765,907	12,971,762	23,205,069	19,840,755
	yards	69,870,506	65,603,292	75,163,458	67,760,825	54,048,585	37,914,100	68,093,197	59,194,229
Dhooties	pounds	59,131,918	57,400,009	70,037,269	66,640,948	70,135,011	77,777,057	73,413,045	73,684,657
	yards	284,769,519	258,974,483	323,639,844	300,948,933	325,016,520	369,356,545	337,602,220	340,127,529
Drills and jeans ...	pounds	7,509,722	8,520,640	12,658,481	15,402,926	21,243,777	15,104,657	21,583,054	19,722,448
	yards	27,813,060	30,789,483	46,328,844	56,503,162	78,611,117	54,283,749	80,844,998	74,304,517
Cambrics and lawns	pounds	744,292	516,759	1,024,747	1,123,655	1,489,532	941,072	1,666,137	1,218,529
	yards	5,052,703	3,544,623	5,701,385	6,379,117	8,276,886	5,194,722	8,472,521	5,950,625
Printers	pounds	6,512,297	6,447,873	6,109,165	7,288,148	5,931,846	5,180,789	6,773,553	6,305,664
	yards	30,383,881	28,006,938	26,899,710	31,599,097	26,593,406	23,067,286	29,836,763	28,284,090
Shirtings and long-cloth.	pounds	66,457,955	75,520,255	100,005,836	98,039,157	99,204,079	86,160,403	100,624,510	101,138,033
	yards	292,487,741	320,705,350	419,624,957	427,752,728	450,629,689	393,779,450	444,500,595	456,239,812
T-cloth, domestics and sheetings.	pounds	29,733,300	30,814,674	35,820,966	46,402,967	31,168,797	24,640,969	27,448,709	21,293,143
	yards	128,968,721	134,288,388	151,401,143	192,132,439	137,396,094	110,511,394	122,402,176	97,387,839
Tent-cloth	pounds	2,326,792	3,906,214	5,479,095	8,552,600	12,001,679	20,108,524	2,890,265	3,772,426
	yards	5,813,845	8,962,447	11,844,282	17,181,136	24,549,790	36,870,290	5,671,173	7,507,785

Other sorts... ...	pounds	6,674,377	7,653,457	9,975,162	9,392,407	9,831,571	14,954,765	19,028,070	16,588,827
	yards	27,285,744	29,626,614	34,263,508	35,912,936	35,899,475	45,733,475	66,649,458	60,886,142
Total ...	pounds	202,763,449	213,576,441	267,165,288	274,851,443	268,772,199	257,839,998	276,632,412	263,564,482
	yards	872,445,720	880,501,618	1,094,867,131	1,136,170,373	1,141,021,562	1,076,711,011	1,164,073,101	1,129,882,568
Coloured piece-goods ...	pounds	68,829,264	61,067,187	81,603,755	98,351,965	106,751,853	85,601,778	102,146,317	98,387,636
	yards	291,845,868	255,206,334	346,647,419	441,962,416	473,104,896	374,015,149	475,706,126	450,967,178
Grey and coloured goods, other than piece-goods.	pounds	2,166,496	1,735,087	2,540,553	3,113,286	3,639,423	3,743,704	3,320,418	3,484,852
	dozens	637,640	512,485	653,344	660,384	706,251	721,172	658,768	707,449
Hosiery...	pounds	471,349	285,918	356,077	409,790	349,373	260,968	293,738	410,784
	dozens	267,411	179,373	220,754	236,576	215,221	148,696	159,357	117,249
Miscellaneous	pounds	157,992	341,267	588,883	959,679	1,638,317	1,826,837	1,250,221	1,407,508
Cotton goods mixed with silk or wool.*	„	—	—	—	42,653	253,005	307,165	203,830	226,529
GRAND TOTAL ...	pounds	274,388,550	277,005,900	352,254,556	377,728,816	381,404,170	349,580,450	383,846,936	367,481,791
	yards	1,164,291,588	1,135,707,952	1,441,514,550	1,578,132,789	1,614,126,458	1,450,726,160	1,639,779,227	1,580,849,746
	dozens	905,051	691,858	874,098	896,960	921,472	869,868	818,125	824,698

* Separately specified with effect from 1917 only.

TABLE C.

COTTON MILLS. (*See* page 56, &c.)

All-India.

Year ending 30th June.	Number of Mills.	Number of Spindles.	Number of Looms.	Average No. of Hands employed daily.	Approximate Quantity of Cotton consumed.	
					Cwts.	Bales of 392 lbs.
1897	173	4,065,618	37,584	144,335	4,553,276	1,300,936
1898	185	4,259,720	38,013	148,964	5,184,648	1,481,328
1899	188	4,728,333	39,069	162,108	5,863,165	1,675,190
1900	193	4,945,783	40,124	161,189	5,086,732	1,453,352
1901	193	5,006,936	41,180	172,883	4,731,090	1,351,740
1902	192	5,006,965	42,584	181,031	6,177,633	1,765,038
1903	192	5,043,297	44,092	181,399	6,087,690	1,739,340
1904	191	5,118,121	45,337	184,779	6,106,681	1,744,766
1905	197	5,163,486	50,139	195,277	6,577,354	1,879,244
1906	217	5,279,595	52,668	208,616	7,082,306	2,023,516
1907	224	5,333,275	58,436	205,696	6,930,595	1,980,170
1908	241	5,756,020	67,920	221,195	6,970,250	1,991,500
1909	259	6,053,231	76,898	236,924	7,381,500	2,109,000
1910	263	6,195,671	82,725	233,624	6,772,535	1,935,010
1911	263	6,357,460	85,352	230,649	6,670,531	1,905,866
1912	268	6,463,929	88,951	243,637	7,175,357	2,050,102
1913	272	6,596,862	94,136	253,786	7,336,056	2,096,016
1914 (year ending 31st August).	271	6,778,895	104,179	260,276	7,500,941	2,143,126
1915 do. ...	272	6,848,744	108,009	265,346	7,359,212	2,102,632
1916 do. ...	266	6,839,877	110,268	274,361	7,692,013	2,197,718
1917 do. ...	263	6,738,697	114,621	276,771	7,693,574	2,198,164
1918 do. ...	262	6,653,871	116,484	282,227	7,299,873	2,085,678
1919 do. ...	258	6,689,680	118,221	293,277	7,154,805	2,044,230
1920 do. ...	253	6,763,076	119,012	311,078	6,833,113	1,952,318

TABLE D.

COMPARATIVE STATEMENT OF COTTON CONSUMPTION, YARN AND CLOTH PRODUCTION IN INDIA FOR A SERIES OF YEARS:—

12 months ending 31st March.	Cotton.		Yarn.		Cloth.	
	Mill Consumption.†	F.-P. Bales of 3½ cwts. each.	Production.*	Bales of 400 lbs. each.	Production.	
	Cwts.		Cwts.		Yards.	Lbs.
1899 ...	58,63,165	16,75,190	45,74,867	12,80,962	35,57,09,050	10,16,89,943
1900 ...	50,86,732	14,53,352	45,87,708	12,84,558	32,94,23,397	9,80,64,807
1901 ...	47,31,090	13,51,740	31,51,563	8,82,437	34,11,76,942	9,87,47,566
1902 ...	61,77,633	17,65,038	51,15,519	14,32,345	40,97,44,993	11,96,50,685
1903 ...	60,87,690	17,39,340	51,44,951	14,40,586	40,63,16,717	12,27,74,014
1904 ...	61,06,681	17,44,766	51,57,338	14,44,054	46,05,54,273	13,80,44,172
1905 ...	65,77,354	18,79,244	51,64,118	14,45,953	54,95,29,065	15,87,46,555
1906 ...	70,82,306	20,23,516	60,79,630	17,02,296	56,49,90,190	16,38,80,194
1907 ...	69,30,595	19,80,170	58,36,611	16,34,251	70,81,39,874	16,57,67,858
1908 ...	69,70,250	19,91,500	56,99,063	15,95,738	80,84,26,561	18,90,51,679
1909 ...	73,81,500	21,09,000	58,64,556	16,42,075	82,44,89,164	19,23,64,697
1910 ...	67,72,535	19,35,010	56,01,484	15,68,410	96,38,69,482	22,88,24,078
1911 ...	66,70,531	19,05,866	54,45,778	15,24,318	1,04,27,41,653	24,58,14,873
1912 ...	71,75,357	20,50,102	55,80,626	15,62,575	1,13,61,51,590	26,66,44,181
1913 ...	73,36,056	20,96,016	61,47,079	17,21,182	1,22,04,42,545	28,54,71,002
1914 ...	75,00,941*	21,43,126	60,96,222	17,06,942	1,16,42,91,588	27,43,88,550
1915 ...	73,59,212*	21,02,632	58,21,291	16,29,961	1,13,57,07,952	27,70,05,900
1916 ...	76,92,013*	21,97,718	64,50,219	18,06,061	1,44,15,14,550	35,22,54,554
1917 ...	76,93,574*	21,98,164	60,81,314	17,02,768	1,57,81,32,789	37,77,28,816
1918 ...	72,99,873*	20,85,678	58,97,996	16,51,439	1,61,41,26,458	38,14,04,170
1919 ...	71,54,805*	20,44,230	54,91,432	15,37,601	1,45,07,26,160	34,95,80,450
1920 ...	68,33,113*	19,52,318	56,76,430	15,89,400	1,63,97,79,227	38,38,46,936

* Year ending 31st August. † Year ending 30th June.

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TABLE E.

NUMBER OF POUNDS OF YARN PRODUCED PER SPINDLE.

The following table shows the *number of pounds of yarn produced in India per spindle in position*, which is a fairly good index of the steadiness with which the spindles have been worked, and the prosperity or depression of the industry:—

Years.	Spindles in position.	Yarn produced.	Pounds per spindle.
		Cwts.	
1896	39,32,946.	38,60,287	109·93
1897	40,65,618	37,78,436	104·08
1898	42,59,720	41,30,320	108·59
1899	47,28,333	45,74,867	108·36
1900	49,45,783	45,87,708	103·89
1901	50,06,936	31,51,563	70·49
1902	50,06,965	51,15,519	114·42
1903	50,43,297	51,44,951	114·25
1904	51,18,121	51,57,338	112·85
1905	51,63,486	51,64,118	112·01
1906	52,79,595	60,79,630	128·97
1907	53,33,275	58,36,611	122·57
1908	57,56,020	56,99,063	110·89
1909	60,53,231	58,64,556	108·50
1910	61,95,671	56,01,484	101·25
1911	63,57,460	54,45,778	95·93
1912	64,63,929	55,80,626	96·69
1913	65,96,862	61,47,079	104·36
1914	67,78,895	60,96,222	100·72
1915	68,48,744	58,21,291	95·19
1916	68,39,877	64,50,219	105·61
1917	67,38,697	60,81,314	101·07
1918	66,53,871	58,97,996	99·27
1919	66,89,680	54,91,432	91·93
1920	67,63,076	56,76,430	94·00

APPENDIX X. (*See* page 99.)

BOMBAY MILLS.

Extract from the Report for Year 1920.

LEGISLATIVE ASSEMBLY.

The beginning of this year marked the inauguration of the new Legislative Councils, at the hands of H.R.H. the Duke of Connaught. The Legislative Assembly has had a very auspicious start, and its work so far has been conducted in a spirit of conciliation and goodwill, which augurs very well for the future. And here I would like to express our best thanks to Government for having given us a representation on the Provincial Council and the Legislative Assembly, and my personal thanks to you for having returned me as your representative. During this year's Session we had to deal with many questions connected with our industry, such as ratification of the Washington Conference conventions and recommendations, the amendment of the Factory Act, and the Budget for the current year. Our views on the Washington Conference convention are embodied in the report. I regret to say the question of fixing the age-limit for young persons was carried against the wishes of the employers of

labour. The question having been decided, I wish the Bombay Municipality would now hurry on with the work of compulsory education at the earliest opportunity, so that children under the age of 12 may receive some education.

Budget and Lancashire Agitation.

In regard to the Budget, which disclosed a very heavy deficit for the year, the important question was the raising of import duty from 7½ to 11 per cent. This proposal, merely to secure necessary revenue to meet the deficit, has brought to the surface a most objectionable form of agitation set up by Lancashire. Gentlemen, this is not a new question. The sympathy with the Indian consumer on the part of Lancashire manufacturers took the form for all these years in the past of having coarse cloth produced locally by Indian factories for poor people subjected to excise duty. This excise duty has not been justified on any ground at all and was absolutely spiteful, since it is well known that cloth and yarn produced in Indian factories do not compete with those produced in Lancashire, and it has been admitted by a Cabinet Minister in the House of Commons that the sphere of competition till 1917 was only 2 per cent. This evil influence of Lancashire on the tariff policy of this country was felt again in the year 1916, when the general Customs was raised from 5 to 7½ per cent., but the tariff on imported piece-goods into India was retained at 3½ per cent. This was done in spite of the fact that more money was wanted, and even the salt duty, which hits the poorest class of people in India, had to be raised in order to secure more money. In 1917, Mr. Austen Chamberlain managed to suppress the agitation because England wanted financial assistance from India.

In the present issue, Lancashire had the effrontery to suggest an increase in the excise duty, which has been condemned on all hands as an unjust and iniquitous tax on the poor people, and the continuation or revival of the excess profits duty. In justification of this outrageous suggestion they express a desire to show sympathy for the interests of the poor Indian consumer. How far they are right will be judged from the quotation from the London *Times*, which I give. Sometime back in a leading article it stated: "the plea that the poor Hindu will have to pay more for his clothing is merely nonsensical. At the bidding of Lancashire the Hindu peasant has had to pay more for his clothing for 20 years because, although it is made in his own country, it is subject to an excise duty."

A Hollow Agitation.

The excess profits duty has now been admitted in every country to have been a levy which destroys the goose that lays the golden egg. In England itself the manufacturers have left no stone unturned to have the excess profits duty removed, and Cabinet Ministers have given out from time to time that the duty will not continue very long, and yet this suggestion has been made in all seriousness for the imposition of this duty in India, in order merely to cripple enterprise and industry. If Lancashire knew what harm it is doing to the good name of England in this country, and how to every shade of opinion in India it proves the hollowness of professions made from very high quarters in regard to India's freedom to work out its own destinies, I am sure they would be reconciled to the inevitable and we would see the last of this insincere agitation.

In this connection I would quote the words of Mr. Asquith. Speaking at Cambridge in 1895, he said: "Such a claim amounts to this, and it is nothing unless it amounts to this, that in the Government of India we are to look not exclusively, not even primarily, to the interests of the Indian people, but that we are to subordinate these interests to the conditions of

those who command votes in this country. I say that to concede such a doctrine as this is to strike at the very roots of the system on which you can justify the maintenance of our rule in India."

India's Good Fortune.

We are fortunate in having at this juncture a strong Secretary of State in Mr. Montagu. What his successors in office will be like one cannot say. We ourselves are free from any selfish or spiteful motive in the suggestion we make to our Government. Our suggestion that the duty should be raised from 7½ to 12½ per cent. was not intended as a counter-blast to Manchester as is stated in certain quarters, but it was in order to enable the Indian Exchequer to collect more revenue to relieve the deficit which I am convinced will be much greater than what was shown in the Budget. The Finance Member has calculated the exchange at 1*s.* 8*d.* which we may not see, and he has not allowed sufficiently for reduced imports, owing to the depression of trade, in his calculation of the revenue under the head of customs. It has been suggested that the new duties will lead to protection for the local textile industry, but it must not be forgotten that those responsible for the starting of new textile concerns will have to pay an additional duty of 2½ per cent. It also penalises the existing mills by taxing any additional plant which may be on order as well as stores and other supplies for weaving, which were till now on the free list. A levy on these articles appears to me to be a phenomenon of double taxation, and I am sorry that the Government have failed to appreciate this issue, or to see the justice of our contention. I hope the next session of the Legislative Assembly at the time of the introduction of the next Budget will put this anomaly right and replace these articles on the free list. I am glad to say that the proposal to impose the silver duty was also vetoed by the Legislative Assembly, and rightly so, as it would have been harmful to the general interests of the country, and incidentally it would have had a bad effect on our yarn trade with China.

The Fiscal Commission.

As announced the other day, a Fiscal Commission is coming this cold season to report on the question of Imperial preference and protection. Its constitution has not yet been decided upon, but in view of the importance of our industry I trust the Government will see their way to have a representative of ours on it. I hope Government are aware of the views of this Association about Japanese competition, and especially about the large imports, free of any duty, of Japanese yarn of those counts which are and could be produced in this country. The appointment of such a Commission was suggested 12 months back. It may take some years (though I hope not) before this Commission reports, and its recommendations are acted upon, and in the meantime this country is allowed to be a dumping ground for subsidised foreign stuff. Why is it that this country should hopelessly suffer in this manner? Why should England impose on India a policy of free trade when deep and lasting harm is being done to our interests—while England herself is fast withdrawing from her adherence to this doctrine? Throughout the war there have been numerous occasions when free trade principles have been abandoned, as in the case of the dye industry in the United Kingdom, and there is now an influential movement on foot to levy a 33⅓ per cent. duty on magnetos and other products which are competing with goods of English production. England is free to settle her own policy, and in my opinion this country should have an equally free hand.

A Free Hand Wanted.

So far as India is concerned, on this question there are few dissentient voices in this country. Mr. Montagu himself admitted in this connection that " he rarely met with an Indian who believed in any doctrine excepting

protection." Mr. Bonar Law, the great statesman who has just retired from public life, in the course of a discussion, I believe in the House of Commons in the year 1912, said that India knew that free trade was not for India's benefit and that it was mere hypocrisy for an Englishman to say that it was for her benefit. Lord Crewe, the then Secretary of State, replied that it was wrong for a man in the position of Mr. Bonar Law to say so, as it would have prejudicial effect in India. Mr. Bonar Law maintained that what he had said was correct, but that he wanted India to be a free trading country, as her markets were of great value to England and this was asked from India in return for services rendered. In other words, India was to be a land for exploitation for other countries. This, gentlemen, we are determined not to permit.

The question of vital importance which is coming before the Fiscal Commission is that of Imperial preference, and I am sure you will agree with me that we cannot possibly accept this principle of Imperial preference so long as we see manifestations of such anti-Indian feeling and of such hostility at the hands of Lancashire. On the other hand, if we are satisfied that the interests of India as a whole will not suffer, that we have complete reciprocity and countervailing advantages, that we enjoy freedom of trade and transit and movement in the Empire, then this Association will have no objection in accepting Imperial preference as a basis of the tariff policy of the country.

APPENDIX XI.

TABLE A (*see* page 106).

Imports and declared value of Iron and Steel.

Articles.	(PRE-WAR YEAR) 1913–14.			1918–19.			1919–20.		
	Quantity.	Value.	Value per ton.	Quantity.	Value.	Value per ton.	Quantity.	Value.	Value per ton.
	Tons.	Rs. (1,000)	Rs. A.	Tons.	Rs. (1,000)	Rs. A.	Tons.	Rs. (1,000)	Rs. A.
Sheets and Plates—									
Galvanised	277,595	5,37,74	193 11	2,500	19,19	775 13	58,400	2,30,24	394 3
Tinned	52,836	1,25,26	237 1	32,000	1,77,02	553 12	42,200	1,89,35	449 0
Not galvanised or tinned	100,606	1,23,38	122 10	18,000	1,33,95	745 2	66,100	2,37,96	360 0
Bars and Channel—									
Iron	26,742	34,85	130 5	6,200	32,90	528 10	10,500	39,13	373 8
Steel	204,613	2,06,56	100 15	27,700	1,84,32	664 15	70,500	2,18,77	310 4
Beams, pillars, girders, and bridgework	89,642	1,15,56	128 15	900	4,37	474 12	22,700	51,38	226 11
Cast pipes and fittings	56,243	90,61	161 2	7,700	28,34	369 9	10,500	33,72	321 2
Steel angle and spring	44,192	46,81	105 15	9,200	78,14	851 4	18,000	52,38	290 5
Wrought tubes, pipes and fittings ...	18,402	46,49	252 10	12,400	83,21	673 4	35,600	1,79 55	503 11
Hoops and strips	30,790	43,18	140 4	23,100	1,32,93	574 14	28,100	1,11,25	396 9
Nails, rivets, and washers	25,076	50,17	200 1	18,800	1,64,87	875 11	8,000	44,84	561 1
Rails, chairs, and fishplates (excluding those for railways).	17,780	19,97	112 5	200	1,14	497 1	7,000	16,08	230 2
Wire	9,819	24,04	244 13	7,400	51,15	688 14	6,400	29,24	457 5
Wire nails	—	—	—	—	—	—	6,700	32,50	485 14
Wire rope	—	—	—	2,600	49,53	192 2	3,500	30,21	874 0
Bolts and nuts	7,368	22,70	308 1	3,100	34,88	1,132 14	4,100	25,75	634 1
Other sorts	56,544	1,13,47	200 11	9,600	69,05	715 1	28,600	1,10,20	385 5
Total	1,018,248	16,00,79	157 3	181,400	12,44,99	686 5	426,900	16,32,64	382 6

TABLE B. (*See* page 109.)

IMPORTS OF METALS.

Countries.	1913-14.	1916-17	1917-18.	1918-19.	1919-20.
	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
Iron (excluding ore)—					
United Kingdom	242	430	244	71	283
Belgium	102	—	—	—	30
Sweden	30	9	7	3	25
Other countries	19	11	50	193	161
Total	393	450	301	267	499
Iron or Steel—					
United Kingdom	6,810	3,261	1,947	2,564	8,487
United States	270	1,445	2,018	2,481	4,090
Belgium	429	3	—	—	132
Japan	—	58	227	663	39
Germany	877	7	—	—	2
Other countries	115	145	327	508	171
Total	8,501	4,919	4,519	6,216	12,921
Steel—					
United Kingdom	402	351	152	147	1,298
United States	12	176	179	1,047	1,209
Belgium	702	1	—	—	237
Germany	647	1	—	—	21
Other countries	14	22	20	623	141
Total	1,777	551	351	1,817	2,906
Copper (excluding ore)—					
United Kingdom	667	94	33	79	1,568
Japan	274	46	351	264	309
France	170	15	8	23	14
Germany	192	—	—	—	—
Belgium	57	—	—	—	—
Austria-Hungary	3	—	—	—	—
Italy	2	—	—	—	—
Other countries	8	14	37	92	211
Total	1,373	169	429	458	2,102
Tin—					
Straits Settlements	379	235	260	363	740
United Kingdom	44	17	10	5	22
Other countries	12	12	8	11	29
Total	435	264	278	379	791
Zinc—					
United Kingdom	127	63	23	42	351
Belgium	29	—	—	—	20
Japan	—	32	172	197	18
Germany	33	—	—	—	—
Other countries	2	23	29	99	34
Total	191	118	224	308	423

[*Continued on next page*]

Countries.	1913–14.	1916–17.	1917–18.	1918–19.	1919–20.
	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)	£ (1,000)
German Silver—					
United Kingdom	67	5	2	—	2
Austria-Hungary	51	1	1	—	—
Germany	30	—	—	—	—
Other countries	—	—	1	—	—
Total	148	6	4	—	2
Lead (excluding ore)—					
United Kingdom	120	169	106	115	151
Other countries	28	29	108	187	71
Total	148	198	214	302	222
Other metals—					
United Kingdom	858	226	98	101	2,237
Other countries	859	239	431	853	623
Total	1,717	465	529	954	2,860
Total metals (excluding ores)	14,683	7,140	6,849	10,701	22,726

The figures for the years prior to 1919–20 are on the basis of Rs. 15 = £1.

APPENDIX XII.

PROSPECTS FOR THE SALE OF CANADIAN PRODUCE AND MANUFACTURES IN INDIA.

General Remarks.—Whereas the export trade from India to Canada, consisting mainly of gunny cloth and tea, has averaged over £1,500,000 for the past four years, the imports into India of Canadian produce and manufactures prior to 1920-21 have been negligible. The following tables clearly show the statistical position:—

Imports into British India from Canada.

—	1913–14	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.
	£(1,000)	£(1,000)	£(1,000)	£(1,000)	£(1,000)	£(1,000)
Iron or steel	—	—	6	1	2	63
Motor cars and cycles, etc.	—	—	—	—	6	905
Paper and pasteboard	—	—	—	6	25	64
Railway plant and rolling stock.	—	—	—	—	—	208
Other articles ...	6	6	44	27	15	90
Total	6	6	50	34	48	1,330

Exports from British India to Canada.

——	1913–14.	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.
	£(1,000)	£(1,000)	£(1,000)	£(1,000)	£(1,000)	£(1,000)
Jute, gunny cloth ...	375	542	828	1,278	1,026	851
Tea	430	317	671	29	425	278
Other articles... ...	147	110	49	308	242	210
Total	952	969	1,548	1,615	1,693	1,339

NOTE.—The value figures have been shown in pounds sterling converted at the rate of Rs.10=£1 sterling for the years 1919-20 and 1920-21 and of Rs.15=£1 for earlier years.

Prior to the war, the Canadian export trade was comparatively undeveloped and shipments to India consisted of small consignments of provisions, principally canned fish and fruits. There were no direct lines of steamers, and transhipment was necessary either at New York or British ports in the case of exports from the Atlantic seaboard or at San Francisco or Hongkong in the case of goods shipped from British Columbia. The stimulus of the war, however, gave a great fillip to Canadian manufacturers and they are now actively seeking outlets for the products of the new factories.

Inauguration of a direct Steamer Service.—The great event of the past year has been the inauguration by the Canadian Government Merchant Marine of a direct steamer service between both the Atlantic and Pacific coasts and India. The first steamer on the berth was the "Canadian Pioneer," which arrived in Calcutta from Canadian Atlantic ports on November 11th, 1920, with a cargo mainly composed of motor cars and motor parts. She was followed on January 31st, 1921, by the s.s. "Boyne" with a similar cargo. The next to arrive on March 7th was the "Canadian Conqueror," closely followed by the s.s. "Trevean" on March 16th. All these steamers were from Atlantic ports. The "Canadian Inventor," with a cargo of creosoted railway ties, arrived from Pacific ports on February 26th. It is still too early to make any definite statement as to the possibilities of making the service remunerative, but it can safely be said that the Dominion Government could not take any action better calculated to stimulate Canadian trade with India, and it is to be hoped that they will maintain the service. What is mainly required is a regular service so that adequate notice can be given to shippers in India in order to afford time for them to secure buying orders from Canada and so that shippers of Canadian goods may quote firm shipment dates to clients in India. It is quite likely that such a regular service would, at all events at the outset, entail financial loss to the shipowners, but as in the present instance the owners are the Canadian Government, whose primary interest is to stimulate Canadian trade, they may consider that it is worth while incurring this loss for a period in order to establish Canadian goods in the markets of the Middle East.

Canadian Imports.—An analysis of the import figures shows that of a total value of £1,330,000 worth of Canadian goods imported into India in 1920-21, £905,000 or 68 per cent. consisted of motor cars and parts thereof, £208,000 or 15 per cent. represented railway plant and rolling stock, £64,000 or 2½ per cent. was paper and pasteboard, and £63,000 or 2½ per cent. was iron and steel.

Motor Cars.—The imports were almost exclusively those of Ford cars, trucks, parts and accessories from the Canadian factory of the Ford organisation. The market in India for cars and trucks of the Ford type

is very great and is likely to grow. Presumably in order to meet the sentiment among Europeans in India in favour of British-made goods, the Ford Company are supplying the Indian market from their Canadian works. This is a steady trade which will probably show considerable expansion.

Railway Plant and Rolling Stock.—The imports represent in the main a number of special hopper wagons for coal and ore, which were built by the National Steel Car Company, Limited, of Hamilton, for the Bengal-Nagpur Railway. The capacity of the coal-hopper wagon is 42½ tons, and the length, over buffers, 41 feet 3 inches. The ore-hopper wagon is similar in design, with a carrying capacity of 45 tons, and a length, over buffers, of 32 feet 10 inches.

Iron and Steel.—The year 1920/21 is the first year in which Canadian steel has figured in the trade returns, and the imports of £63,000 are very encouraging, although, it should be added, that, in view of the abnormal character of the period, it is still too early to state with any certainty whether Canadian steel will compete in price with British, American, or Belgian steel. With reasonable freight rates, however, there is no reason why it should not compete with the Pittsburg article if only Canadian steelworks can give regular deliveries. The imports of American iron and steel into India have advanced steadily from £282,000 in 1913/14 to £6,486,000 in 1920/21. This is the result of a footing gained during the war and also of active representation on the spot, either by branches of the large American steel organisations or by active agents. If Canadian steel exporters hope to compete, their first move should be the appointment of good agents in India.

Paper and Pasteboard.—The shipments of Canadian paper in 1920/21 are the first on record, and there is no obvious reason why the Dominion should not develop a considerable trade with India in this article. As will be seen from the analysis of the paper imports, in Chapter IV, page 119, there is an important market in this country, although, in view of the extension of local paper mills and the development of the paper-pulp industry, India is likely to become more and more self-supporting, and it is quite possible that in a few years time she may be an exporter of paper pulp manufactured from bamboo and grasses.

Future Prospects for Canadian Trade.—A close investigation of Indian conditions was made by Mr. H. R. Poussette, Director of the Commercial Intelligence Service of the Dominion of Canada, in 1920, and a series of 10 detailed reports embodying the conditions and prospects for Canadian participation in the most likely trades will be found in the Weekly Bulletins, Nos. 892-901, published under dates of March 7th to May 9th, 1921, by the Department of Trade and Commerce, Ottawa. Canadian exporters would do well to study these reports as—although they were written during a somewhat abnormal period—they give a fairly clear idea of the articles in which Canada might compete. These reports deal with the various trades in such detail that I do not propose to make any further comment here. I would like, however, to submit a few remarks with regard to the important question of representation and agencies, which, to my mind, is of the first importance in dealing with Eastern markets.

Methods of Representation.—In dealing with hundreds of applications from Canadian firms for information with regard to the Indian market, I have been very much impressed by the general lack of knowledge of how business is conducted in the East. In most cases the applicants appeared to consider that they had only to be placed in touch with a number of buyers and business would result, while expressions such as securing the services of a "jobber" frequently occur. I would recommend Canadian firms, who really wish to study this question, to Part III of my last report on "The Conditions and Prospects of British Trade in India at the close of the War," published in 1919 by His Majesty's

Stationery Office, Cmd. No. 442. In this report will be found a detailed account of the methods of representation best suited to the various types of trade.

To summarise briefly, it may be stated that active representation on the spot is absolutely essential in developing an Indian business. This may be achieved in several ways. In the first place, manufacturers or groups of manufacturers of articles in which a large and steady business might be built up, such as iron and steel, railway plant and rolling stock, machinery, paper or provisions, might find it advisable to open a branch office in India. The majority of Canadian exporters, however, would probably be best served by an active firm of merchant agents in each of the principal ports, Calcutta, Bombay, Madras, Karachi and Rangoon. As a preliminary move, travelling representatives should be sent out on a cold-weather tour to investigate possibilities and to appoint agents. In order to economise, such representatives might make a tour of the whole of the East, including India, the Straits, Dutch Indies, China and Japan. Thanks to the direct shipping service maintained by the Canadian Pacific Ocean Services between Vancouver and Far Eastern ports, a satisfactory trade has been built up in Japan and China. Now that a direct service is being run to India, there is no reason why a similar result should not soon be an accomplished fact in this country. Initiative and energy, however, will be required. Before the war the United States occupied a somewhat similar position in India's trade to that of Canada to-day. By appointing agents, in some cases opening branches, by sending out scores of travellers, and by systematically canvassing the market, however, her traders have raised the total value of American shipments to India from £3,193,000 in 1913-14 to £35,298,000 in 1920-21. This is a great object lesson to the Dominion of what can be achieved by concentrated effort. Canada is equally well situated to supply a very great many of the commodities in which America has recently developed a steady and lucrative trade, if only her traders will investigate conditions in India and adopt their selling organisation to the needs of the market.

APPENDIX XIII. (*See* page 166.)

VALUE, IN THOUSANDS OF POUNDS STERLING, OF PRINCIPAL GOVERNMENT STORES IMPORTED INTO BRITISH INDIA BY SEA DURING THE YEARS 1907-08 TO 1919-20.

(*From the report of the Stores Purchase Committee.*)

Articles.	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20
	£	£	£	£	£	£	£	£	£	£	£	£	£
1. Apparel, including boots and shoes	39	57	31	23	16	25	42	62	92	453	580	1,240	424
2. Arms, ammunition, etc.	283	105	74	143	94	146	350	216	129	396	1,826	953	1,044
3. Books and printed matter ...	88	116	65	89	89	15	5	9	8	5	4	2	4
4. Building and Engineering materials	55	52	40	23	65	83	90	67	42	43	*	*	*
5. Chemicals, drugs and medicines ...	60	47	72	67	77	122	78	73	183	312	355	328	312
6. Coal, coke and patent fuel ...	3	28	48	18	60	103	276	58	17	6	11	44	1
7. Cotton manufactures	42	42	38	30	42	23	26	37	42	353	733	546	297
8. Flax manufactures	20	29	41	18	23	30	23	39	91	503	526	295	297
9. Hardware and cutlery	321	208	233	155	196	176	227	284	296	541	334	694	870
10. Instruments and apparatus ...	116	136	11	95	123	140	137	183	174	268	326	307	419
11. Machinery and millwork	181	256	185	166	211	172	204	213	129	138	177	255	447
12. Metals	540	380	338	323	404	474	532	482	921	1,012	1,022	1,293	1,667
13. Paper, stationery, etc.	126	124	103	97	80	116	189	156	146	253	162	267	403
14. Railway plant and rolling stock...	1,791	3,013	1,967	1,294	1,680	1,695	2,685	2,273	979	163	327	424	4,462
15. Ships, parts of	268	2	2	16	9	12	26	8	13	568	324	12	20
16. Telegraph materials	105	63	64	71	86	72	101	102	80	126	150	142	579
17. Woollen manufactures	97	59	33	34	78	34	40	54	75	246	955	2,424	690
18. All other articles	294	291	282	239	321	316	342	352	705	1,690	1,475	3,793	1,794
Total	4,429	5,008	3,627	2,901	3,654	3,754	5,373	4,668	4,122	7,076	9,287	13,019	13,730

* Included under all other articles.

APPENDIX XIV. (*See* page 170.)

STORES PURCHASED BY INDIAN GOVERNMENT DEPARTMENTS AND RAILWAYS.

AVERAGE ANNUAL VALUE, IN THOUSANDS OF RUPEES, OF STORES PURCHASED BY GOVERNMENT DEPARTMENTS AND RAILWAYS, DURING THE PERIOD 1910–11 TO 1913–14 AND 1914–15 TO 1918–19.

(Compiled from the Report of the Stores Purchasing Committee.)

—		Imported Stores purchased in India.	Produce of India.		Stores obtained through Director General of Stores or Home Board.	Stores purchased outside India.	Total.
			From Government Factories.	From Private Dealers.			
		Rs. 1000	Rs. 1000	Rs. 1000	Rs. 1000	Rs. 1000	Rs. 1000
Government of India ...	1910–11 to 1913–14	6,14	75	37,86	29,75	17	74,67
	1914–15 to 1918–19	17,49	1,56	66,69	41,40	2,06	1,29,20
Local Governments and Administrations	1910–11 to 1913–14	50,05	7,70	62,22	29,83	4,46	1,54,26
	1914–15 to 1918–19	1,01,51	11,85	1,24,16	29,77	4,64	2,71,93
State worked Railways ...	1910–11 to 1913–14	19,68	72	1,61,83	3,52,01	—	5,34,24
	1914–15 to 1918–19	62,92	1,78	2,52,33	1,38,32	—	4,55,35
Company worked Railways ...	1910–11 to 1913–14	35,06	53,66	93,71	1,78,12	—	3,60,55
	1914–15 to 1918–19	1,98,40	68,69	5,01,02	2,38,33	1	10,06,45
Army Department... ...	1910–11 to 1913–14	6,59	62,27	53,55	71,18	—	1,93,59
	1914–15 to 1918–19	52,24	44,71	1,73,39	2,59,87	1	5,30,22
Grand Total...	1910–11 to 1913–14	1,17,52	1,25,10	4,09,17	6,60,89	4,63	13,17,31
	1914–15 to 1918–19	4,32,56	1,28,59	11,17,59	7,07,69	6,72	23,93,15

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APPENDIX XV. (*See* pages 166 and 170.)

Annual Value of Purchased Stores.

Average annual value, in thousands of rupees, of stores purchased, comparing expenditure in England and India.

I.—*Years* 1910–11 *to* 1913–14.

Names.	Imported stores purchased in India.		Produce of India—				Stores obtained through Director-General of Stores or Home Board.		Stores purchased outside India.		Total.
	Value.	Percentage on total.	From Government factories.		From private dealers.		Value.	Percentage on total.	Value.	Percentage on total.	
			Value.	Percentage on total.	Value.	Percentage on total.					
	Rs.		Rs.		Rs.		Rs.		Rs.		Rs.
1. Government of India Departments ...	6,14	8·2	75	1·0	37,86	50·7	29,75	39·9	17	0·2	74,67
2. Local Governments	50,05	32·5	7,70	5·0	62,22	40·3	29,83	19·3	4,46	2·9	1,54,26
3. State-worked Railways	19,68	3·7	72	0·1	1,61,83	30·3	3,52,01	65·9	—	—	5,34,24
4. Company-worked Railways	Detailed information not available.										
5. Royal Indian Marine	92	6·4	26	1·8	7,39	51·5	5,79	40·3	—	—	14,36
6. Ordnance Department, Factories ...	46	0·4	59,53	54·9	15,45	14·3	32,93	30·4	—	—	1,08,37
7. Ordnance Department, Arsenals ...	14	0·6	—	—	14,87	68·3	6,76	31·1	—	—	21,77
8. Indian Medical Service	10	0·6	2,01	11·5	84	4·8	14,55	83·1	--	—	17,50
9. Military Works Services	4,94	50·6	20	2·0	3,54	36·3	1,08	11·1	—	—	9,76
Total as per Appendix XIV ...	1,17,52	8·9	1,25,10	9·5	4,09,17	31·1	6,60,89	50·2	4,63	0·3	13,17,31

II.—*Years* 1914–15 *to* 1918–19.

1. Government of India Departments ...	17,49	13·5	1,56	1·3	66,69	51·6	41,40	32·0	2,06	1·6	1,29,20
2. Local Governments	1,01,51	37·3	11,85	4·4	1,24,16	45·7	29,77	10·9	4,64	1·7	2,71,93
3. State-worked Railways...	62,92	13·8	1,78	0·4	2,52,33	55·4	1,38,32	30·4	—	—	4,55,35
4. Company-worked Railways	1,98,40	19·7	68,69	6·8	5,01,02	49·8	2,38,33	23·7	—	—	10,06,45
5. Royal Indian Marine	23,81	21·9	1,03	0·9	15,40	14·0	68,71	63·1	—	—	1,08,95
6. Ordnance Department, Factories ...	2,65	1·0	20,79	7·8	1,18,95	44·8	1,23,40	46·4	—	—	2,65,79
7. Ordnance Department, Arsenals ...	26	0·8	—	—	12,30	36·1	21,50	63·1	—	—	34,06
8. Indian Medical Service	97	1·2	21,95	28·4	9,36	12·1	45,06	58·3	—	—	77,34
9. Military Works Services	24,55	55·7	94	2·1	17,38	39·5	1,20	2·7	1	—	44,08
Total as per Appendix XIV	4,32,56	18·1	1,28,59.	5·3	11,17,59	46·7	7,07,69	29·6	6,72	0·3	23,93,15

APPENDIX XVI. (*See* page 179.)

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS OF THE INDIAN STORES PURCHASE COMMITTEE.

211. *Introductory.*—The following summary of our principal conclusions and recommendations is intended to provide a bird's-eye view of the contents of the preceding report; we do not attempt here to review points of detail, or to recapitulate the reasons which have led up to the judgments formed, but refer the reader to the appropriate chapters and paragraphs.

CHAPTER I.

212. *Terms of Reference.*—The Committee was appointed, in view of the necessity of encouraging Indian industries while at the same time securing economy and efficiency, to inquire and report on the measures required to enable Government Departments to obtain their requirements as far as possible in India, to devise the necessary organisation, to suggest the nature of its internal and external relations, and to indicate the modifications necessary in the stores purchase rules.

CHAPTER II.

213. *Scope of Inquiry.*—In the course of our inquiries, we have considered it necessary to make a comprehensive survey of the subject matter, and our investigations have, therefore, had reference to the general question of the supply of stores of all sorts for Government Departments, railways, and quasi-public bodies; and have comprised a review of the conditions governing the purchase both of indigenous and of imported stores, as well as of ships.

214. *Relative Importance of Imported Stores.*—Under peace conditions imported stores form a preponderating part of the purchases which we have reviewed. Under war conditions the ratio between such stores and those of local origin was modified in favour of the latter, but imported stores still represented one-half of the total.

215. *Stock Depôts not Justified.*—In suggesting the details of the proposed Indian Stores Department, we have decided that, in view of the great expense which would be involved without corresponding advantage, the establishment of central stock depôts would not be justified.

CHAPTER III.

216. *Lessons from History.*—A review of the stores purchase policy of the Government of India from the year 1862 onwards leads to two prominent conclusions:—

(i) That the Government of India have not been generally successful in the efforts made by them, from time to time, to procure relaxations of the Stores Rules, in respect of the encouragement of local industries and of the local purchase of imported stores.

(ii) That this failure has been contributed to largely by the influence of the Store Department of, and the Consulting Engineers to, the India Office.

217. *Stores Policy Recommended.*—With the establishment of an efficient department in India for the purchase and inspection of stores the time has, we consider, now come when the Secretary of State should delegate to the Government of India full control over the details of the Stores Rules. Complete freedom should be granted to India in this matter; and it should be accepted as a policy, not only in theory but also in practice, that all stores required for the public service shall be obtained in India whenever they are procurable in the local market of suitable quality and reasonable price, preference being given to articles of Indian origin.

218. *Reconstitution of Store Department, India Office.*—We anticipate that the work devolving upon the Director-General of Stores, India Office, will be reduced, and consider that his department should, in due course, be reconstituted as the London Branch of the Indian Stores Department, the status of the officer in charge becoming that of a Director, immediately subordinate to the Director-General of Stores in India. As an interim measure, and pending the above development, we recommend the transfer of the existing organisation of the Director-General of Stores, India Office, from the immediate control of the Secretary of State to the charge of a High Commissioner for India.

Chapter IV.

219. *Need for an organisation.*—A review of the existing methods of purchase in the several departments of the public service shows that local officials are, at present, greatly handicapped for want of information regarding, and facilities for using, existing Indian resources, owing to the absence of any central authority possessed of comprehensive knowledge, and of an organisation capable of not only placing orders but also seeing that they are properly met.

Chapter V.

220. *Government factories.*—A consideration of the existing practice of Government with regard to the maintenance of factories and departmental workshops indicates the necessity for the adoption of a more consistent policy of reliance, in ordinary cases, upon private enterprise, although we recognise that Government factories may properly be retained in some cases on grounds of convenience, and, in others, of expediency. We question the validity of the argument sometimes advanced as to the relative economy of Government factories; but, even if this could be substantiated, we do not think that it should determine the decision of Government. Some of the existing factories could, in pursuance of the above policy, be either reduced in scope, or altogether abolished.

Chapter VI.

221. *Position of local governments.*—In view of the tenor of the Reforms Act, we consider that local governments should, in future, be free to deal, as they wish, with purchases of stores, of indigenous origin or local manufacture, for their own requirements. Having regard, however, to the influence which the adoption of a sound policy, in respect of the methods by which imported stores are procured, may be expected to have upon the industrial development of India, we consider that the purchase of imported stores should continue to be controlled by the Government of India, so far as regards policy though not as regards the precise mechanism utilised. Local Governments should not be bound to utilise the agency of the Indian Stores Department, though they would be free to use it if they so desire; and we have provided special facilities to enable them to do so.

222. *Position of company-worked railways and other bodies.*—Companies which work Government railways are free agents as regards purchase of stores. Under their existing contracts, they could not be compelled to conform to the policy approved by Government, nor to utilise the Indian Stores Department, though it is hoped that they will generally do so. We suggest that, when new working contracts are framed, opportunity should be taken to require the railway companies to conform to the Government of India system and procedure. Indian Native States and *quasi*-public bodies, such as municipalities, should be free to utilise the services of the new department subject to a reasonable payment.

Chapter VII.

223. *Present policy barren of result.*—As regards stores of Indian origin, the principal ground for complaint at present is, that the expressed policy of Government in favour of the purchase, by preference, of such stores, rather than of imported articles, is defeated by the prevailing lack of information, amongst Government officers, of the available resources of the country; by the difficulty they experience in making the close comparison of price now required; and by their defective equipment for making use even of such resources as are within their knowledge. The result is that officers are induced to adopt the line of least resistance, and to obtain stores of extraneous origin when, with better facilities, they might obtain instead suitable goods of Indian manufacture. This reacts prejudicially on the development of Indian industries, and on the economy and convenience of the public service.

224. *The remedy an Indian Stores Department.*—The remedy is to be found in the establishment of an expert purchasing agency in India, equipped with facilities for knowing the manufacturing resources throughout the country; able to purchase efficiently in the various markets of India; and competent to carry out such inspection as may be necessary. The Indian Stores Department, the establishment of which is thus indicated, must have authority and facilities to ensure that orders shall, in accordance with the accepted policy of Government, be placed in India for goods of local production whenever possible, and that imported stores shall only be purchased when suitable Indian goods are not procurable.

225. *Assistance for Indian industries.*—We consider that, in addition to providing in this manner for the full utilisation of existing industries in India, Government must further give them practical encouragement, especially in the initial stages of their enterprise, and must assure them of a reasonable measure of protection against outside competition. The measures advocated by us, subject to appropriate restrictions and safeguards, are:—

(i) guarantee of orders for a limited period;
(ii) placing of orders at favourable rates for a limited period;
(iii) favourable railway rates;
(iv) revision of the fiscal policy of Government, with a view to the protection of local industries;
(v) adoption of a conventional rate of exchange in effecting comparisons between prices quoted for indigenous and imported goods of the same class.

We consider that the conditions under which contracts are placed in India should be assimilated to those attaching to contracts entered into by the Director General of Stores, India Office, which at present are in some respects more favourable to the British manufacturer.

Chapter VIII.

226. *Imported stores—removal of restrictions.*—The purchase of such stores as are not procurable of local manufacture is, at present, regulated artificially by rules, the effect of which is practically to prevent, in ordinary cases, such stores being purchased in India from dealers or others. We agree that the time has come when such artificial restrictions should be abolished, and that it should be open to officers responsible for the purchase of imported stores to take advantage of the cheapest available market in which suitable articles can be obtained, having due regard to the convenience of rapid supply and other special advantages. The several channels through which these stores might be purchased should thus be free to compete with each other on their merits. We anticipate that, in practice, it will be found advantageous to procure certain classes of imported stores considerably more freely than hitherto through the

agency of branches, agents and dealers in India. The demands placed on London will thus be reduced in two distinct ways:—

(i) by the interception of demands for imported stores for which articles of Indian manufacture can be substituted, and

(ii) by the increasing purchase of imported stores in India instead of in the United Kingdom.

CHAPTER IX.

227. *Importance of inspection.*—Efficient arrangements for inspection are of great importance; it is on the distinct understanding that all stores purchased will be subject to examination, either during manufacture or before acceptance, that our main recommendations are based. In view of the intention that the Indian Stores Department should act as an instrument for the development of Indian industries, its inspection staff will be responsible, not merely for the detection of faults, but also for indicating to suppliers the steps necessary to improve the standard of their manufactures, and for the introduction of standardisation of all articles in general use.

228. *Inspection depôts.*—We recommend the institution of inspection depôts at suitable centres to facilitate the examination of certain classes of goods. At each depôt a pattern room should be maintained.

229. *Absorption of existing staffs.*—A portion of the existing ordnance inspection staff should ultimately be absorbed, and, because of the conditions attaching to the use of military stores, certain military officers should be deputed from the Army for employment as liaison officers with the Indian Stores Department. The inspection branch of the department should absorb the existing staff of the Metallurgical Inspector, Jamshedpur, and the Inspection and Test House staff at Alipore. A test house should also be established in Bombay.

CHAPTER X.

230. *Shipbuilding.*—For the encouraging of shipbuilding, we recommend the liberalisation of the existing rules governing the supply of ships for the public service, with a view of utilising the capacity of Indian shipyards, and of promoting their development.

CHAPTER XI.

231. *Stores rules revised.*—Having regard to the relaxations which will be desirable with the alteration in conditions in India in future, and to the complicated nature of the existing rules governing the purchase of stores for the public service, we have recast the rules with special attention to the provision of a clear enunciation of the policy of Government; to making effective the intention of giving all reasonable preference to the products of Indian industry; to the substitution, for existing arbitrary restrictions, of a more businesslike latitude in regard to the channel of supply of goods of foreign origin; and to the exercise of judgment in the comparison of competitive tenders.

CHAPTER XII.

232. *Organisation.*—We have set out the details of the organisation which we propose for the Indian Stores Department, both in its initial and ultimate form, and have indicated the range and nature of the duties of the staff to be employed in the several sections on both the purchase and inspection sides. The organisation set forth provides for a headquarters staff, divided into purchase and intelligence and inspection branches, and a general office, assisted by provincial agents and inspectors at the chief centres of industry. The provincial agents will provide special facilities for meeting the wishes of local Governments in regard to supply of stores, and will act as intelligence agents of the Indian Stores Department in close collaboration with the provincial Directors of Industries. We have laid down the extent to which the use of the Indian Stores Department should be compulsory, and that to which it should be optional for the several departments of Government and others concerned.

CHAPTER XIII.

233. *Procedure.*—For the convenience of the various authorities interested, we have set forth in some detail the procedure, which we contemplate should be adopted, both by the departments which utilise the Indian Stores Department, and by the Department itself in dealing with the demands preferred upon it.

CHAPTER XIV.

234. *Recruitment.*—In the important matter of recruitment we have indicated the qualifications to be looked for in the several members of the staff whose employment we think necessary, and the sources from which they should be obtained. While indicating that, at the commencement, expediency must be the principal guide in selecting officials of suitable experience to fill the various posts, we make it clear that, once the department is fairly established, it will generally be advisable, at least on the administrative side, to engage only junior men in each branch, and to fill vacancies by promotion. We recommend that, whenever suitably qualified men can be obtained in India to fill vacancies, preference shall be given to statutory natives of India.

235. *Interchange of staff.*—The question of interchange of staff between the Indian and English establishments is specially dealt with, and, in this connection, we have drawn attention to the advantage to be expected from the transfer of some of the experienced establishment of the India Office Store Department to fill some of the new appointments in India.

CHAPTER XV.

236. *Financial arrangements.*—We contemplate close association between the officer of the Finance Department in charge of the Accounts Section and the headquarters officers and branches of the Indian Stores Department; and we lay stress upon the importance of this connection, with a view to the prevention of delays in payments of bills for stores supplied, and to the avoidance of friction. We contemplate that bills shall be paid from headquarters, and that debits shall be transmitted by the Accounts Section to the departments concerned. Particular attention is invited to the necessity for the observance of ordinary commercial practice in respect of the prompt settlement of accounts.

CHAPTER XVI.

237. *Cost of the scheme.*—The details set out by us show that the additional net annual cost of the Indian Stores Department may be estimated at Rs.14,60,000, a figure which, though considerable in itself, is relatively small, and represents only about two per cent. of the value of the stores which we anticipate will be handled each year. The estimates, particularly of the volume of stores to be dealt with, are unavoidably speculative; but even if the ratio of the cost of the department to the value of stores handled should prove to be appreciably higher than we anticipate, it is still very unlikely that it will reach an unreasonable figure.

(*Signed*) F. D. COUCHMAN,
President.

A. W. DODS.
C. C. H. HOGG.
H. A. K. JENNINGS.
LALJI NARANJI.
MILKI RAM.
T. RYAN.*

(*Signed*) J. C. HIGHET,
Secretary.

Simla, the 19th July, 1920.

* Subject to the contents of the attached memorandum.

APPENDIX XVII. (*See* page 179.)

JOINT MEMORANDUM BY MESSRS. COLLIER AND RYAN

SECTION I.

Introductory.

Though we are in full agreement with some of the most important recommendations which are being submitted to Government by the Stores Purchase Committee, we find ourselves at variance with them on certain matters which are also of considerable moment; and, as the influence of this permeates the main report, we have decided, rather than ask our colleagues to confuse the thread of their argument by introducing our divergent opinions from place to place, to embody our views in this self-contained statement. This has become in fact necessary owing to the circumstance that one of us (Mr. Collier) finds himself constrained by his other duties to leave the Committee a short time before the main report will be fully drafted. The questions involved in the work of the Committee have, however, been fully discussed and arrangements have been made to ensure that the scope of this memorandum, as finally printed, will be limited to those points on which our views differ in important respects from those recorded by the majority of the Committee.

2. Mr. Collier has been associated with the Committee practically throughout its proceedings; Mr. Ryan was appointed to it at a late stage of its discussions in response to a request for Mr. Heseltine's replacement.

SECTION II.

Extent of our Agreement and Disagreement with the Majority.

3. We desire in the first place to make clear the extent to which we are able to endorse the views of our colleagues; the respects in which, differing from them, we think they have strayed from the matters in issue; and the subjects in regard to which we have not been able fully to agree with them.

4. We observe that the Committee's report contains in sequence the following matter (the figures in brackets correspond to the chapters of the Committee's report):—

(I) *An introductory chapter.*—We have no comments to make on this.

(II) *A review of the subject matter and scope of the enquiry.*—It will be evident from our later remarks that in our opinion the main purpose for which the Committee was appointed is to work out a detailed scheme for an expert purchasing and inspecting agency in India for the purchase of supplies for the public services, in order not only to ensure that such purchases shall be made with economy and efficiency, but also to carry out effectually the principle already embodied in the Stores Rules that articles should not be imported which can be supplied by manufacturers in India equally well both in respect of price and quality. Thus we should regard it as of essential importance to secure that, for instance, imported glassware should not be purchased through any channel while glassware made in India might equally well be bought instead. We do not, however, consider that the establishment of an expert purchasing and inspecting agency in India would necessitate or justify any fundamental change in the policy laid down in the Stores Rules regarding the purchase of imported stores, which is founded on well-considered principles of economy and efficiency. Nevertheless we do not feel ourselves to be debarred from making such recommendations as we think suitable regarding the methods of purchase of imported stores, and the consequent alterations in the Stores Rules, so long as these are likely to advance the purpose which the Committee was appointed to develop, and are treated as supplementary to the principal questions before us.

(III) *A history of stores policy.*—It follows from our preceding remarks that we regard the labour and research expended by our colleagues on this subject as being largely misdirected in the circumstances of this Committee's appointment. We have not made an independent review of the subject matter dealt with in this historical retrospect and cannot therefore either criticise it in detail or indicate any actual omissions; but we feel bound to say that the impression left by it upon our minds is that it presents the case, if not in a wrong light, at least in misleading perspective. In particular we consider it obvious that if a more progressive stores purchase policy has not hitherto been pursued by Government the defect is due as much, or more, to the non-existence in India of any organisation suitable for carrying such a policy into practice, as to any undue conservatism on the part of the technical advisers of the Secretary of State for India. Our colleagues have indeed alluded to this factor, but in our estimation they have assigned to it much less than its due weight, both in the portion of their report now specially mentioned, and in their anxiety to subordinate the stores agency in London to the proposed Stores Department in India.

(IV) *A review of the existing methods of purchase in the several departments.*—No remarks.

(V) *A discussion of the policy underlying the maintenance of Government factories and railway workshops.*—We are in agreement with the observations of our colleagues.

(VI) *A note on the relations of the proposed Stores Department with local Governments and* quasi-*public bodies.*—We agree with the observations of the majority.

(VII) *A note regarding the purchase of such indigenous stores as can fairly compete with imported goods.*—We are in general agreement with the conclusions of our colleagues, and go farther than we understand some of them do in that we definitely regard this portion of the report, together with the concrete recommendations subsequently made for carrying into effect the policy advocated as the essential and most important part of the Committee's work.

(VIII) *A note on the purchase of imported stores.*—For the reasons already indicated, and developed more fully in Section III of this memorandum, we cannot agree with the conclusions arrived at by our colleagues. We are, on the contrary, of the opinion recorded by the Indian Industrial Commission, in paragraph 194 of their report, that: "The prescriptions of the Stores Rules, regarding the classes of articles that may be bought in India are suitable, subject to the addition of a provision . . . regarding purchases from Indian branches of British manufacturing firms."

(IX) *A note on the question of inspection.*—We are in general agreement with the Committee.

(X) *A chapter regarding shipbuilding.*—We agree with the Committee.

(XI) *Proposed alterations in the Stores Rules.*—It follows from our remarks under sub-heads (II), (III), and (VIII) above, and the fuller discussion in Section III below, that we must regard as uncalled for the extensive changes in the Stores Rules, proposed by our colleagues. We agree that minor changes are desirable and have embodied these in the re-draft of the existing rules which appears in Section IV of this memorandum.

(XII)-(XV) *Detailed proposals for the organisation of the India Store Department and its functions.*—We are in general agreement with the recommendations made as to the organisation of the Department and (except in regard to the handling of imported stores) as regards its functions.

5. We proceed in the following Sections to explain more fully our views in regard to the points in which we has expressed disagreement with the Committee. We may observe here that in these draft rules and in the following portion of this memorandum we have retained the

designation "Director General of Stores" for the head of the Store Department in London, as at present, and have used the designation "Controller General of Stores, India," for the head of the proposed new organisation in India. We think that this would be less likely to cause confusion than to designate the latter officer "Director General of Stores" as proposed by our colleagues: their objection to the title Controller General is, we understand, based on the fear that Army officers in particular might confuse the two "C. G. Ss." (since officials are commonly referred to by their initials). We think that the functions of the Chief of the General Staff and of the Controller General of Stores are so different that confusion is unlikely to occur in practice. In any case; it will make the intention of our present remarks clearer if in this note we maintain the designation preferred by us.

Section III.

Purchase of Imported Stores.

6. We have very carefully considered the recommendations of our colleagues in regard to the methods to be adopted in future for the purchase of imported stores. Their proposals involve the entire remodelling of the Stores Rules, the prescriptions of which the Industrial Commission considered to be suitable subject to the addition of a provision regarding purchases from Indian branches of British manufacturing firms. We do not believe that the radical changes in those Rules which are recommended by our colleagues are needed to secure the objects aimed at by the Industrial Commission, namely, the establishment of an expert purchasing and inspecting organisation in India for procuring supplies required for the public service, and for preventing demands being sent to England which might be satisfactorily met by articles of Indian manufacture. We go further, and are strongly of opinion that to invest the head of the new Stores Department in India, as proposed by our colleagues, with power to purchase through his subordinates imported stores from merchants or middlemen at his discretion, would certainly not be productive of economy, might be liable to serious abuse, and would lead to a great increase of work and delay in dealing with demands. At best, it could hardly fail that vain endeavours would be made to obtain quotation in India for imported stores which it would be found after all, for the reasons stated below, could be obtained more cheaply and probably of better quality through the Home agency. We, therefore, consider that unless demands for imported stores can be satisfactorily met by the substitution of articles of local manufacture, or by purchase from Indian branches of British manufacturing firms, or otherwise subject to the prescriptions of the amended Stores Rules which we recommend (*see* Section IV following) the demand should at once be passed to the Home agency for compliance.

7. In connection with this question of buying imported stores, we have carefully considered the terms of reference to the Committee. It is reasonable to assume that these terms must be read in conjunction with, and be interpreted in the light of, the Resolution of Government with which they are promulgated; as well as with the principles which were set forth by the Indian Industrial Commission, accepted by the Government of India, and approved by the Secretary of State: it must be remembered in this connection that our Committee was appointed strictly in pursuance of the recommendations of the Industrial Commission, the views of which are thus of peculiar relevance. After carefully weighing these considerations, we are satisfied that there can be no reasonable doubt that any general discussion of the stores policy of Government is not within the scope of the terms of reference and, indeed, is expressly excluded therefrom. Assuming, however, that this were not the case, we observe from the History of the Stores Rules attached to the report (Appendix B) that the Rules themselves have

received most careful consideration from the Government of India, and various Secretaries of State, from time to time over a long course of years. One of the guiding principles which has been continually kept in mind in their preparation and development, has been that Indian products and manufactured articles should be utilised to meet the requirements of the public services in so far as such products and manufactured articles can be obtained of suitable quality and at a reasonable price. It is this principle which the establishment of the stores purchasing agency in India is designed to make more effective and to safeguard, and it is this principle which has been brought specially to the notice of the Committee. It is in our opinion unreasonable to suppose that, in the absence of any instructions to that effect, the Stores Purchase Committee should take upon itself to recommend radical changes in rules which have been deliberately adopted by the highest authorities after full and careful consideration. Nevertheless while holding this opinion we have considered it proper to deal specifically with the one point mentioned by the Industrial Commission (purchase through branch firms) as requiring an amendment of the Stores Rules, and to suggest such minor alterations therein as seem to be desirable under present conditions, and to be necessary in view of the proposed establishment of a Stores Department in India. Our recommendations will be found in Section IV of this memorandum dealing with the Stores Rules.

8. In spite of what we have said above to the effect that no radical alteration of the Stores Rules is called for, we think it well to offer some further remarks on this question of purchasing imported stores because some witnesses, particularly representatives of Chambers of Commerce and merchants, have advocated that all imported stores should be purchased in India, either through branches or agents of the manufacturers or through merchants; and because some witnesses have also recommended that the Stores Agency at Home for the supply of imported stores (which has hitherto been the Store Department of the India Office) should be abolished. If all, or the bulk of, imported stores were to be purchased in India it is evident that the Stores Agency at Home would no longer be required, or at least that it might be very greatly reduced in size. The India Office Store Department Office was initiated nearly 60 years ago. Its organisation has been built up as the result of an accumulated experience of many years, and it is equipped with a well trained purchasing and inspecting staff. In regard to some, and particularly to railway engineering, stores it is advised by an eminent firm of consulting engineers and as regards shipbuilding, etc., by a naval architect of high repute. There is, therefore, a strong *a priori* argument against abolishing the Department and losing the services of the experienced staff employed therein or connected therewith.

9. It has also been maintained by some witnesses that the local purchase of imported articles through merchants would tend to the industrial development of India on the ground that trade precedes industry, and we believe that this view has greatly influenced several of our colleagues. We are not impressed with this argument, and some at least both of the European and Indian witnesses have questioned its soundness. The stores will be imported into this country whether purchased from merchants or through the Home agency, and the volume of trade is not affected whichever method is adopted. The manufacturers at Home are already aware that the supplies ordered by the Store Department of the India Office are destined for India, and if they think it worth while will arrange to establish branches of their manufactures in the country. The merchant on the contrary, in so far as he is an importer and not a manufacturer, will not be interested in promoting manufacture in India; indeed, his interests will be decidedly opposed to this seeing that he would thereby be liable to lose his business as an importer and the profits attaching thereto. It will be for the Directors of Industries, assisted by the Stores Department in India, to bring the requirements of Government to the notice of actual or potential manufacturers in the country.

10. The cost of imported stores purchased through merchants in India must include the profits of the middleman in addition to the actual expense of handling the order. The latter may be taken to correspond with the departmental cost of the India Store Department in London, but seeing that the department deals almost entirely with actual manufacturers the profit must become an extra charge on the revenues of India. The freight rates and conditions obtained by the department are, we understand, owing to its large business, much more favourable than can be obtained by the trade. Private firms also insure their consignments whereas the India Office does not, but is its own insurer, and thus saves the profits of the insurance companies on its consignments. The tonnage shipped by the department averaged, in pre-war years, about 250,000 to 300,000 tons a year, and the value of the stores then supplied was roughly about £4,000,000 to £5,000,000 a year, so that the savings under both these heads may be taken to represent a considerable sum of money. On general grounds therefore it may reasonably be presumed that to procure imported stores through merchants in India must be more expensive than obtaining them through the Store Department in England.

11. Apart, however, from considerations of economy a very serious objection to placing orders for imported stores with merchants in India lies in the fact that, generally speaking, inspection can only be carried out after the articles have arrived in the country. This may not be till several months after the order has been placed, and it is then a great temptation to the indenting officer to accept the stores, even if not up to standard, rather than incur the delay involved in their rejection, and it is also a great temptation to the contractor to endeavour, by any means in his power to get the stores passed, rather than have them left on his hands after incurring the expense of getting them out. This objection does not apply to stores already in the country, for the indenting officer is free to accept them or not as he pleases, and no time has been lost; nor does it apply to any great extent in the case of many items of standard plant and machinery supplied by branches of British manufacturing firms of repute, especially in view of the fact that inspection of the stores by the the home agency during manufacture or before shipment could in such a case generally be provided for. It applies in a less degree to articles which are already on their way out to India, for in that case the importer has evidently thought it worth while to import the goods as an ordinary commercial venture, and will not therefore be much worse off even if the indenting officer rejects them, and not so much time will have been lost.

12. We therefore consider that, from the point of view of efficiency as well as of economy, it is not as a general rule desirable to purchase imported stores in the country, but cases will arise when exception should be made to this general rule, and particularly in regard to stores actually in the country and to plant and machinery supplied by branches of British manufacturing firms. This opinion accords with the recommendation of the Public Works Department Reorganisation Committee; and in confirmation of it, it may also be well to quote from paragraph 3 of Despatch from the Government of India (Commerce and Industry Department) to the Secretary of State, No. 50, dated 28th August, 1913, urging that the Stores Rules should be amended to allow of the purchase of plant and machinery under certain conditions from Indian branches of British manufacturing firms. The passage referred to is as follows:—

> "We believe, however, that sufficient emphasis was not laid upon a condition to which the Committee* referred in paragraphs 47 and 48 of their Report, namely, that such purchases should be permitted, not from agents or middlemen, but only from Indian branches of the best Indian firms. This is a condition of primary importance, and is one on which we desire to lay considerable stress. We admit that,

* Stores Committee Report, dated 2nd July, 1906.

had draft rule No. 5 been accepted as it stood, the purchase of imported articles through agents might have been encouraged with harmful results. It is obvious that all possible steps should be taken to discourage the purchase of imported stores the price of which includes middlemen's profits, but the purchase of imported stores through or from Indian branches of recognised manufacturing firms stands upon an entirely different footing."

13. On the other hand, we hold the opinion that when imported stores are actually in the country (and not merely said to be here) purchase should be made locally when their price and quality compares not unfavourably with that at which similar stores can be obtained through the Home agency after making the necessary allowances for transit charges, etc.; and in cases of urgency we see no serious objection to local purchase when the stores are already on their way out, if the same conditions as to price and quality can be satisfied. But in all such cases, unless accurate comparison of quality and price is made before purchase is effected in India, it is obvious that much money might be unconsciously wasted because even a trifling difference in the quality or cost of each article may mean a large extra expenditure in the aggregate.

14. The majority of Government officers qualified to give an authoritative opinion state that the articles obtained through the India Office can be safely depended on for quality, and there is much evidence to show that generally they cost less than similar articles bought in the country. On the other hand, complaints of the time taken in obtaining requirements by indent from Home are numerous. That delay should have occurred during and since the war is not surprising. In normal times we understand that delays are mainly attributable to the failure of contractors to carry out their promises of delivery. A good deal of time is sometimes occupied in India between the date when the indent is made out by the indenting officer and the date when it is actually sent Home. But whatever may be the explanation, we do not disguise from ourselves the fact that the delay involved, and also the difficulty which is sometimes felt in explaining the requirements to an organisation some 6,000 miles away, may sometimes cause inconvenience which will tend to diminish or even counterbalance in some cases the advantage obtained in price. Nevertheless, the views obtained from the largest Government purchasers of imported articles, such as the State-worked Railways, Army Department, Royal Indian Marine, Posts and Telegraphs, Stationery and Printing, although in favour of giving greater discretionary powers than are at present allowed to purchasing officers, do not indicate a desire for any drastic change in the existing system.

15. On the grounds, therefore, of economy and efficiency, we have no hesitation in saying that, in our opinion, it would be a mistake to attempt to do without the Store Department in England as the main agency for the supply of imported stores. We anticipate that the decision to place the Department under the control of the Government of India (whether through a High Commissioner responsible to, and under the orders of, the Government of India, or through some other administration) should remove the political objections which are held against the present system.

Section IV.

Alterations to the Stores Rules.

16. The Stores Rules, as they at present stand, are reproduced in Appendix C to the Committee's Report. We have stated that, in our opinion, it is not necessary, and would be dangerous, to alter these rules so radically as has been proposed by our colleagues in Chapter XI of the main Report; but we have explained in the preceding section that we are in favour of making provision for purchases of certain kinds from Indian

branches of British manufacturers, as well as of making certain minor alterations in the rules. We now reproduce the rules as a whole in the form in which we recommend they should be re-issued.*

Section V.

Procedure in Regard to Home Indents.

17. We have indicated our disagreement with the attitude of the Committee on the general question of the method of purchasing such non-indigenous stores as will still have to be purchased for the public service. In conformity with their views on this subject our colleagues suggest the introduction of a system of indenting for requirements which will enable the head of the Stores Department in India to exercise the wide discretion in regard to such purchases which they desire he should have. In our opinion the procedure indicated is unnecessary and will be found cumbrous and dilatory in practice.

18. It is therefore necessary to define the procedure which in our opinion should be observed (*a*) by indenting officers and departments, and (*b*) by the central agency, to enable the necessary scrutiny of indents to be carried out efficiently with the minimum amount of inconvenience and delay. The view we have expressed, and which appears to be in accordance with that of the Industrial Commission and of the Government of India, is that the Stores Rules in regard to the purchase of imported stores are based on sound principles and only require to be altered in certain minor respects so as to adapt them to present conditions and recent developments, particularly the proposed establishment of an Indian Stores Department. If this view is accepted the procedure of scrutinising the Home indents need not, we think, be complicated by any general endeavour to ascertain whether articles which must in any case be imported can be obtained of suitable quality and at a satisfactory price from *merchants* in India. Such action would tend greatly to delay a decision on the question whether the articles should be included or excluded from the Home indent, and would in our opinion have no good result. The reasons on which we base this opinion have already been explained in some detail.

19. As regards purchase of plant and machinery through Indian branches of British manufacturing firms, we have suggested in the amended Stores Rules the conditions which should govern such transactions. These conditions are generally in accordance with the recommendations of the Government of India contained in the despatch quoted above and due regard has been paid to the observations of the Secretary of State in his Despatch No. 5 Stores, dated 20th September, 1918. We consider that, subject to those conditions, the Controller General of Stores, and other qualified officers as therein provided, should be free so to purchase plant and machinery when they require it as advantageous to do so; but inasmuch as one of the main reasons urged by the Government of India for permitting this method of purchase is that the branch employed will be able to afford technical advice and assistance to the indenting officer and will also be able to erect the plant and correct any defects that may develop later, it seems to us to be almost certain that when the indenting officer requires such assistance, etc., he will either purchase the plant himself, or will ask the Controller General of Stores to do so, should such purchase not be within the powers assigned to him. We therefore assume that purchases of this nature, when contemplated, will not come within the scope of the Home indents and will therefore not affect the prompt transmission of indents to the Home agency for compliance.

20. The organisation which is being recommended for the Stores Department in India, and its intimate association with the Directors of Industries

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* These Rules, as subsequently modified and circulated by the Government of India will be found below, Appendix XIX.

in the various provinces, should ensure that full information will be available in the headquarters of the Department and at its provincial agencies as to the capacities and developments of local industries. The Department should, therefore, by the aid of the information which we propose that it shall constantly receive from the Home agency as to Home prices, be able to decide in most cases without difficulty whether or not demands for imported stores can be satisfactorily met by articles of local manufacture. In special cases the Controller General of Stores, India, before coming to a decision whether or not it will be economical to purchase stores of Indian manufacture, may find it necessary to consult the Director General of Stores, London, by telegraphic reference as to Home prices. To facilitate such references it might be advisable to consider whether the existing Stores Code, which was drawn up some years ago, but has been little tried, could be adapted for the purpose. In the case of important contracts, such as for example a large hydro-electric scheme (and possibly for ship-building) when considerable delay must in any event probably occur between the submission of tenders and their acceptance, it may sometimes be feasible to call for simultaneous tenders in England and India to an identical specification, but for ordinary supplies we are advised that the invitation of simultaneous tenders presents many practical difficulties, not the least of which is that of coming to a prompt decision on tenders received from countries many thousand miles apart, especially when as often happens technical or other questions are raised by tenderers and must be settled before the order can be placed. It may be well to quote here from the evidence of Mr. F. Palmer, C.I.E., a partner in the firm which acts as Consulting Engineers to the India Office. He said:—

> "The main difficulty in the way of simultaneous tendering by firms in India and Great Britain was the very frequent practice which firms had of slipping qualifying clauses into their tenders. The tender which appeared to be the lowest might not necessarily be so. All tenders had to be subjected to most rigorous examination and comparison, and this ruled out the use of cables. The one that appeared to be a very favourable tender in response to say a call for a girder in which the steel was required to pass up to 30 tons might be found to contain an inconspicuous clause that the steel in the girder offered could only be guaranteed up to 25 tons. Provided the tenders were 'clean,' that is, free from all qualifications, he would accept the lowest whether from India or from Great Britain. Even in normal times he had found the prices to vary considerably in very short periods."

We therefore do not recommend the general practice of calling for simultaneous tenders. Even in the case of important works or installations, we consider that simultaneous tenders should only be invited under the advice of the consulting engineers or other officers responsible for the design and efficiency of the plant specified.

21. It will be for the Controller General of Stores in India to decide whether or not demands for imported stores can be satisfactorily met by the supply of articles of Indian origin. If they cannot be so met, we consider that the demands should be passed to the Home agency for compliance and that the responsibility of the Stores Department in India regarding them should thereupon cease. We consider also that when simultaneous tenders have been invited and the Home tender is found to be the more favourable, the order should be placed by the Home agency and action on the demand on which it arises should be entrusted entirely to that agency.

22. In these circumstances the procedure for scrutiny which we propose is as follows: Indenting officers, and departments, and among these we would include local Governments and Administrations and the State and company-worked railways, should prepare, as they do now, separate

indents for stores which in their opinion cannot be obtained advantageously of local manufacture and must therefore be imported. In preparing these indents, they will be guided by information which will be furnished to them from time to time by the central agency as to the development of local industries. We consider that theoretically it would be best for the Home indents thus prepared to be forwarded to the central agency for scrutiny before they are sent Home. In that case, they would after scrutiny be countersigned by the Controller-General of Stores and forwarded by him direct to the Director-General of Stores, London, or other Home agency, for compliance. Should the Controller-General of Stores on scrutiny of an indent consider any article or articles comprised therein to be such as could advantageously be obtained of Indian manufacture, he would either strike the item or items in question out of the indent, or suspend their supply pending further enquiries, informing the indenting officer of the action taken, but would not delay the whole indent pending such enquiry. In cases of small importance, it would probably be sufficient for him to warn the indenting officer that in future such articles should be obtained of local manufacture, mentioning the probable source or sources of supply. The matter could then be investigated before the next indent was prepared. But, though theoretically the above procedure would afford the greatest security against articles being imported which might with equal advantage be obtained of Indian manufacture, we think that in practice it would suffice and would avoid the delay due to the scrutiny if, at the time the indent was sent Home, a copy of it was sent to the Controller-General of Stores for scrutiny. If on making such scrutiny that officer wished to strike any item or items out of the indent, with a view to the substitution of articles of Indian manufacture, or to suspend the supply of such articles pending further inquiry, it would be easy for him, unless scrutiny were unduly delayed, to request the Home agency by telegraph to cancel or suspend the item or items in question and in time to prevent any action being taken towards their purchase in England. The telegram should be confirmed by letter and the indenting officer should be informed. The indents should bear a certificate that a copy has been sent to the Controller-General of Stores for scrutiny.

23. Whichever procedure for scrutiny is adopted, we consider that when once an indent has been passed to the Home agency, whether the Director-General of Stores, London, or the Board of Directors of the railway company concerned, or their consulting engineers, all responsibility for compliance with the indent should rest with the Home agency and not with the Controller-General of Stores in India, and that all correspondence regarding the indent or the stores demanded should be carried on as at present between the Home agency and the indenting officer direct.

Section VI.

Organisation.

24. Differing as we do from the majority of the Committee in our views as to the work to be undertaken by the new Department, *i.e.*, in respect of imported stores—which they evidently expect to be bought freely in India, whereas we consider that these should still be bought as a rule through the Director-General of Stores, London—it may naturally appear that we should logically hold that the staff which they recommend should be reduced. This would be so if the numbers and cost of the proposed staff could be directly correlated with the volume of work to be done; but for several reasons this is not the case. The Committee obviously can make no reliable estimate of the extent to which local Governments, native States, railway companies, municipalities, and other *quasi* public bodies, will utilise the new agency; and even if the

actual clients were known, still only an approximate idea could be formed of the total volume of work to be done. Moreover, the staff that would be necessary to transact any definite volume of business in the unusual conditions in which the new Stores Department will work must be largely a matter of speculation at the outset. And finally the Committee have held, for reasons which we consider good, that technical specialists must be employed in the several distinct purchasing and inspection branches; and within limits the precise amount of work that may fall to the lot of any such branch would not affect the necessity for retaining the services of these officers.

25. We are in agreement with our colleagues that, at the outset at least, the superior staff indicated by them as necessary for the work of the various branches appears to represent an irreducible minimum, and that even if the Department handles in practice a much smaller quantity of imported stores than the Committee anticipates, a corresponding reduction of the superior staff will not be found practicable. As regards subordinate establishments the numbers, and therefore the cost, may more reasonably be expected to depend on the volume of stores handled, and we therefore incline to the opinion that, if the policy and procedure which we recommend is adopted, the Committee's estimate of cost under this head may in practice prove to be susceptible of reduction.

Section VII.

Relations of the Indian with the Home Stores Agency.

26. We agree with the Committee that the Store Department of the India Office should be placed under a High Commissioner for India; but we disagree with their view that this should only be done as a temporary expedient, and that after the Indian Stores Department has been formed the Home agency should be made a branch of the Stores Department in India, though still under the control of the High Commissioner in regard to matters of establishment, discipline and law.

27. Even supposing that the High Commissioner would be willing, which we think extremely improbable, to accept the charge of the Department under such conditions, it seems to us that it would be quite impracticable for the Department itself to serve two masters. Either it must be wholly under the control of the High Commissioner or wholly under that of the Stores Department in India, and of these alternatives we have no doubt whatever that the former is preferable. We assume that the High Commissioner will exercise in respect of the Director-General of Stores, London, those general functions of control and assistance which are now exercised by the Secretary of State for India and by the Stores Committee of the Council of India with his authority as explained in Appendix E to the Committee's report. We consider that such control and assistance is very necessary and could only be efficiently exercised by an authority in immediate touch with the Director-General in London. We cannot see that any useful purpose would be served by making the Department in England subordinate to the Department in India. On the contrary, we think that the Controller-General of Stores in India will have enough to do in organising and running the Department in India without being saddled with any responsibility for the working of another Department 6,000 miles away. It appears to us that these two agencies should be quite distinct though working in co-operation and corresponding freely with one another.

28. If the central agency in India is established on the lines proposed it will itself scrutinise all indents in order to eliminate all items which should be purchased in India under rules to be laid down. Having done this, it will pass the indents to the Stores Department in England for compliance. The agency in India and the agency in England will

both be under the Government of India as will the High Commissioner himself if appointed. The functions of the two agencies will be parallel, one being charged with the duty of buying stores in India, the other with that of buying at Home. We can no more conceive that it would be practicable for the agency in India to control the agency in London than we can conceive the reverse. In fact, we are convinced that it would be impossible to carry on the London agency satisfactorily unless it is allowed a perfectly free hand to do its best, with all the local knowledge and experience which it possesses, to supply stores of satisfactory quality, and of the description required by the indenting departments, at the best price obtainable.

29. Both agencies must be considered to be the servants of the departments to which they make supplies, and must be responsible to them for the quality and price of the stores supplied. When questions arise in regard to quality, price or urgency it is essential that each supplying agency should be in direct touch with the departments served. Where questions of policy arise the matter must be decided by the Government of India after consulting either or both agencies and hearing their views. As regards the English agency, the views would probably be ascertained through the High Commissioner. In our opinion, the views of the Home agency are just as much entitled to consideration as those of the Indian agency, and there is no doubt that a department which has built up its experience for over 50 years should be in a position to deal with problems arising in England better than a new department which for several years to come can have but small experience, and that almost entirely Indian.

30. There seems to us to be no reason why a separate agency in London should not be able to afford just as much assistance to the agency in India in the capacity of a distinct and separate department as if it were treated as a branch of the latter. It is found practicable in India to have many agencies, *e.g.*, railways, having very similar duties, but independent of one another, though working in co-ordination for the benefit of the country. So far as we can judge the system works well. A general control of the railways is maintained by the Railway Board, and in the case of the Stores Agencies control would be maintained by one of the departments of the Government of India, presumably the Industries Department.

(Signed) G. H. Collier.
T. Ryan.

APPENDIX XVIII. (*See* page 179.)

Extract from Despatch from the Government of India to Provincial Governments and Administrations.

Government of India. Department of Industries. (*Stores.*)

Dated Delhi, the 29th March, 1921.

13. *Encouragement of indigenous manufactures.*—The Government of India approve most of the recommendations for the encouragement of indigenous manufactures set forth in paragraphs 101-107 and in Chapter V of the Committee's report, subject to the following remarks:—

(i) They are considering separately the proposals of the Committee made in paragraph 104 of their report regarding the grant of favourable railway rates.

(ii) With reference to the Committee's remarks on the effect of the increase in the sterling value of the rupee on the prosperity of Indian manufacturers, the Government of India do not consider that any sufficient proof of inability on the part of Indian manufacturers to compete at the recently high exchange rates has been adduced by the Committee; nor has a sufficient degree of stability been reached in respect either of the exchange rate, as is shown by the recent fall, or of the cost of manufacture and transport in England and India, to enable the position to be estimated with any certainty. They will, however, watch carefully the effect of the above conditions on the prosperity of Indian manufacturers.

(iii) The Government of India desire to direct the particular attention of local Governments to the very difficult question dealt with in paragraph 103 of the Committee's report, namely, the idea of paying prices higher than market prices for a locally made article in order to encourage indigenous manufacture. The alternative proposal, of accepting goods of inferior quality, the Committee rightly condemn as likely to lead to abuse. The Committee's proposal is " that the additional cost involved should not usually fall on the consumer, but be allocated to a special head from which grants should be made by the Imperial or local Governments, as the case may be." Under the proposals of the Government of India for the allocation of functions explained in paragraph 5 above, local Governments, as already pointed out, will have full power to pay whatever price they may see fit for indigenous or even for imported stores. The Government of India, however, feel it necessary to point out the dangers attending the use of this power. The working of the Stores Department, whether Imperial or provincial, should be governed strictly by business standards both as regards price and quality, and any departure from these standards may lead, not only to extravagance or possible corruption, but to the grant of support to a provincial manufacture to the detriment of a similar industry in an adjoining province. These considerations will doubtless engage the anxious attention of local Governments; and it is presumed that they will desire to exercise these powers only sparingly and under proper safeguard. A check on their procedure will be provided by the Committee on public accounts. The central Stores Department will always be ready to assist the Finance Departments of local Governments with any information that may be needed for the proper presentation to the Public Accounts Committee of cases of undesirable procedure. For purchases with which the Government of India are themselves concerned, they would only permit this form of assistance in very special cases; their sanction will be required in each instance, and would be given only after careful consultation with the consuming Department and other interests concerned. In their view, if it is desired to encourage an indigenous industry by any form of purchase on favourable terms, this should be by way of an openly declared bounty applicable to the whole country and the entire production of the industry wherever it exists, not by the payment of a bonus only on the articles consumed by Government. The payment of a bounty in this way is, it is clear, a form of fiscal protection; and the country as a whole will not get the benefit of such protection unless its precise terms are made known to the public. Any form of protection that can be given haphazard, or which absolutely prevents outside competition, is not likely to do permanent good to the industries of the country. The grant

of bounties of this sort cannot be lightly resorted to, since it will involve the provision of a careful check over the number of articles actually produced, in order to avoid fraud, which can only be prevented through constant local inspection. The Government of India feel that the question of encouragement by either of the above methods of local industries is fraught with serious difficulties and dangers, and should not in any case be undertaken without the most careful consideration.

14. *Purchase of imported stores.*—The purchase of imported stores is a matter on which the members of the Committee have exhibited a considerable divergence of opinion. The proposals of the Government of India regarding the allocation of functions to the Departments of local Governments have, however, eliminated almost entirely, it is hoped, the causes of variance, so far as the Departments of local Governments are concerned. Local Governments will have a free hand to purchase all kinds of stores either through the central Stores Department, or through their own agency. The operations of the central Stores Department should, the Government of India think, be governed in this respect by existing rules with the few relaxations that are proposed by them or by the Committee. These provisions have in the past operated generally in the direction of economy. The Government of India are well aware of the difficulties which these provisions entail; but they trust that the relaxations proposed by them have removed the most serious objections; and it will be open to local Governments, if they prefer a less restricted, though possibly less economical, method of purchase, to set up their own agencies. With regard to the main principle of the purchase of imported stores, the Government of India find themselves in general agreement with the minority proposals, and propose to follow them, so far as their own purchases are concerned, for the following reasons. Too free local purchase of imported stores will tend to discourage the replacement of imports by local manufactures, and to strengthen the existing vested interests which have preferred in the past an easy profit from the sale of imports to risking their money in attempts to produce locally. The Government of India also think it probable that the free local purchase of imported stores will not be in the interests of economy. This question has in the past been the subject of much dispute, which can only be settled effectively with the help of a local agency for purchase and inspection. The practical experience of such an agency will enable the Government of India and local Governments to decide to what extent and in what cases the local purchase of imported stores is advisable.

15. *Position of London Stores Department.*—The position of the London Stores Department has been dealt with in paragraphs 44 and 45 of the majority and in paragraphs 14, 15, 23, and 26-30 of the minority memorandum. The Government of India agree with Messrs. Collier and Ryan's memorandum in holding that two separate Stores Departments, one in England and one in India, with entirely separate responsibilities and fields of action, the one controlled by the Government of India through the High Commissioner, and the other by the Department of Industries, is an arrangement which can be worked without difficulty or friction; they see obvious objections to the dual control of the London Stores Department by the High Commissioner in London and by a subordinate Department of the Government of India in Simla-Delhi. The appointment of a High Commissioner in London subordinate to the Government of India renders it possible to secure that the London Stores Department shall work in accordance with the declared policy of the Government of India in favour of obtaining an ever increasing proportion of its requirements from Indian manufacturers; and will confine itself to the necessary duty, which it has hitherto fulfilled, of providing such stores as have still to be obtained from overseas, with the greatest possible economy, efficiency, and despatch.

16. I am to explain that the opinion of local Governments will be separately invited on the draft rules for the purchase of Government stores proposed by the Government of India.

APPENDIX XIX. (*See* page 186.)

PROPOSED RULES FOR THE SUPPLY OF ARTICLES FOR THE PUBLIC SERVICE.

PREAMBLE.

The policy of the Government of India is to make its purchases of stores for the public service in such a way as to encourage the industries of the country, so far as is consistent with economy and efficiency. In pursuance of this policy the following rules are issued for the supply of articles for the public service. These rules, which are subject to any instructions regarding specific articles which have been or may be issued by the Government of India from time to time (*e.g.*, those relating to the supply of stationery), supersede all previous orders which are not explicitly continued.

RULES APPLICABLE TO THE GOVERNMENT OF INDIA AND TO PROVINCES OTHER THAN GOVERNORS' PROVINCES.

Rule 1.—*Articles manufactured in India from Indian materials.*

All articles which are produced in India in the form of raw material, or are manufactured in India from materials produced in India, should, in preference to articles not manufactured in India or wholly or partly manufactured in India from imported materials, be purchased locally, provided that the quality is sufficiently good for the purpose and the price not unfavourable.

Rule 2.—*Articles manufactured in India from imported materials.*

All articles wholly or partly manufactured in India from imported materials should, in preference to articles not manufactured in India, be purchased in India, subject to the following conditions:—

(*a*) That a substantial part of the process of manufacture of the articles purchased has been performed in India.

(*b*) That the price is as low as that at which articles of similar quality can be obtained through the Store Department, London.

(*c*) That the materials employed are subjected to such inspection and tests as may be prescribed by the Government of India.

NOTE.—The term " a substantial part of the process of manufacture " in Clause (*a*) means that a substantial part of the preparation of the finished article must be performed in India, whether from raw materials or from component parts obtained in a finished state from other sources.

Rule 3.—Articles which are not manufactured in India.

Articles which are not manufactured in India should be obtained by indent upon the Store Department, London, except in the following cases:—

(*a*) When the articles are already in India at the time of order, or are already on their way out, and their price and quality are not unfavourable as compared with those at which similar articles could be obtained through the Store Department, London, and the cost of the supply does not exceed the limits prescribed in Rule 11. When the total value of the articles required is trifling it is generally desirable to purchase them locally.

(*b*) In the case of important construction works let out on contract, articles not manufactured in India required for the construction of such works may be supplied by the contracting firm subject to the following conditions:—

(i) That the firm is approved by the Government of India and is included in the list of firms so approved. A list of firms which have been approved up to date is given in List A attached to these rules. (p. 308.)

(ii) That the materials are subject to the current specifications and tests prescribed by the Government of India.

(*c*) Plant and machinery and component parts thereof may be purchased from branches* established in India of British manufacturing firms borne on the list of the Store Department, London, and approved by the Chief Controller of Stores, India, provided that the following conditions are observed;—

(i) That the purchase is made by the Chief Controller of Stores, India, or by a highly qualified engineer directly responsible to the Government of India for the order so placed.

(ii) That the plant and machinery are of standard pattern such as are ordinarily manufactured by the firm, and have actually been so manufactured.

(iii) That the branch firm entertains a staff of expert mechanics capable when so required of erecting and repairing the plant and machinery which it supplies.

(iv) That the actual price of the articles (exclusive of any expenditure representing cost of erection) is as low as that at which articles of the same make can be supplied by the Store Department, London.

(v) That the cost of supply under any one order or detailed estimate in respect of any one type of standard plant or machinery does not exceed Rs.50,000.

(N.B.—Care must be taken to prevent orders being split up in such a way as to evade the intention of this condition.)

(vi) That when test or inspection of the plant or machinery during manufacture or before shipment is necessary or desirable, arrangements should be made for such test and inspection to be carried out by the Store Department, London.

NOTE.—It should clearly be understood by indenting officers that this rule is subject to the preference which should be given under Rules 1 and 2 to articles of Indian manufacture.

* Branches may be held to cover approved technical agents of British manufacturers who do not merely act as selling agents but are also in a position to render the same kind of technical assistance in India as actual branches of the firms.

Rule 4.—Articles which should be purchased in India.

The following articles, whether manufactured or produced in India or not, should be purchased in India, provided that they comply with the current specifications, are of the requisite quality, and can be obtained at a not unfavourable price:—

(*a*) Those of a perishable nature.
(*b*) Explosives.
(*c*) Block tin.
(*d*) Wines and spirits and English bottled beer for the use of Government hospitals in India.
(*e*) Kerosine oil.
(*f*) Plant and materials for electric installations intended to take current from existing centres; and small electric power and lighting plants of not more than 25-kilowatt capacity, which involve the provision of generators and cables for distribution, provided they comply with the current specifications and tests prescribed by the Store Department, London.
(*g*) Australian timber.
(*h*) Australian copper.
(*i*) Italian marble.
(*j*) British Columbian timber.
(*k*) Plant and materials for small gas installations the cost of which does not exceed Rs.15,000.
(*l*) Cheap articles of common use required in small quantities only.
(*m*) Such other classes of articles as may from time to time be prescribed by the Government of India. All such cases should be reported to the Secretary of State for his information.

Rule 5.—Special purchases in India.

In cases of emergency, or when inconvenience to the public service would be caused by waiting to obtain an article from England through the Store Department, London, or when, owing to the greater promptitude of supply, an economy can be effected by purchasing in India articles which, under the foregoing rules, should be obtained through that Department, the purchase may be made in India, subject to the limits prescribed in Rule 11; provided that the articles are in India at the time of order or are already on their way out. In such cases if the value of the articles exceeds Rs.1,500 the sanctioning officer should place on record the reasons which make the local purchase desirable. This record shall be available for the inspection of the Examiner of Accounts or the supervising officer when required.

Rule 6.—Inter-departmental purchases.

Nothing in the rules is to be deemed to prohibit the purchase of stores of European manufacture by one department or railway from another.

Rule 7.—Method of obtaining stores not purchased in India.

All articles which, under the foregoing rules, are not to be bought in India, should be obtained by indent on the Stores Department, London, except any which the Secretary of State may have specially authorised the Government of India or its officers to purchase direct outside India. Such purchase is at present permissible in the case of the following articles:—

(i) Seeds.
(ii) Cinchona bark.
(iii) Articles for experimental or research purposes required by officers approved by the Government of India from time to time. A list of the officers thus approved is given in List B attached.

(iv) Excise instruments and apparatus required by provincial Excise Departments for experimental or research purposes.

(v) China, glass, cutlery, plate, crockery and perishable fabrics, including linen for residences which are furnished by Government.

(vi) Australian timber.

(vii) British Columbian timber.

(viii) Such articles as Superintendents of Vaccine Depots may require for the preparation of vaccine lymph (*e.g.*, lanoline and glycerine).

(ix) Chemical and scientific instruments which do not require careful inspection and testing or which are of standard description usually quoted by well-known firms, provided that the articles cannot be procured from the Medical Store Depots.

(x) Articles required for Viceregal residences in special and urgent cases.

NOTE.—Payments for stores purchased under this rule should be made direct to the suppliers by the purchasing officers.

Rule 8.—*Method of comparing prices.*

In all cases in which the selection of source of supply depends upon comparison of prices the procedure to be adopted for such a comparison is as follows:—

(i) A reference should be made to home prices notified continually by the Store Department, London, to the Chief Controller of Stores, India, or as otherwise ascertained, and freight should be added at the current rates paid by the Store Department, London, together with such charges for interest, insurance, and freight brokerage as may be declared from time to time by the Chief Controller of Stores.

(ii) In cases of important contracts, the prices ruling in the English market should be ascertained by telegraphic reference to the Store Department, London.

(iii) In cases where the necessary information as to home prices is not available the purchase in India shall be subject to the condition that the price is not unfavourable.

(iv) In order to arrive at the market value at an Indian port of the article imported from England the following charges shall be included:—

(*a*) Landing, wharfage, and port charges.

(*b*) Customs duty as shown in the tariff to be applicable to the article in question, to be calculated on its cost plus the additional charges mentioned in the earlier part of this rule.

(v) The cost of carriage to site from port or place of manufacture, as the case may be, shall be taken into account.

Rule 9.—*Tests.*

Any articles purchased in India which should be tested are liable to the specifications laid down from time to time by competent authority with the approval of the Government of India, and should be required to pass the tests prescribed for such articles.

Rule 10.—*Firms from which iron and steel may be bought in India.*

Important iron and steel work, if purchased in India, should only be obtained from firms approved by the Chief Controller of Stores and

entered in a schedule as collected from time to time by that officer. A list of approved firms is given in List C attached. (p. 309.)

NOTE.—By " important iron or steel work " are meant articles of iron or steel which form important components of the project in hand, *e.g.*, bridge girders and roof trusses, built up in the firm's workshops and supplied ready for erection, in such sections as may be convenient, and rolled steel beams, rails or other sections cut to length or otherwise prepared at the firm's workshops to suit the indenting officer's requirements. The intention of the rule is to ensure that parts, the accurate preparation of which is essential to the security of a project shall be obtained only from firms which possess workshops and appliances capable of turning out work of the desired standard. The raw materials used may be either imported or of Indian manufacture, subject to the usual specifications.

Rule 11.—*Financial Limits on powers of officers to make purchases in India.*

In the case of purchases made under Rules 1, 2 and 4, an officer's powers of purchase extend to the ordinary limits to which he is empowered to enter into contracts: but in the case of purchases made in India under Rules 3 (*a*) and (*c*) and 5, the limits for expenditure on any one article or an any number of similar articles purchased at one time are as follows:—

In respect of Rules 3 (*a*) and 5.

(*a*) Civil Departments.

(i) Heads of Departments, Commissioners of Divisions, other officers of or above the rank of Collector whom the Local Government may select	Rs.500
(ii) Other officers authorised to incur expenditure ...	Rs.100
(iii) Controller of Printing, Stationery and Stamps ...	Rs.2,000
(iv) Surveyor-General of India	Full powers.
(v) Agricultural Adviser to the Government of India and Director of the Agricultural Research Institute, Pusa	,,
(vi) Director-General of Observatories	,,
(vii) Director-General, Posts and Telegraphs	,,
(viii) Political Resident, Persian Gulf	,,
(ix) Chief Commissioner, Andaman and Nicobar Islands	,,
(x) Mint Masters	,,
(xi) Local Government	,,

(*b*) Public Works Department.

(i) Executive or Assistant Engineer holding charge of a Division	Rs.1,000
(ii) Superintending Engineer or Superintendent of Works	Rs.5,000
(iii) Local Government	Full powers.

(*c*) Railway Department.

(i) Executive or Assistant Engineer holding charge of a Division on a line under construction or survey ...	Rs.1,000
(ii) Engineer-in-Chief holding charge of a line under construction or survey	Rs.5,000
(iii) Agent of an open line	Rs.10,000
(iv) Railway Board	Full powers.

NOTE.—Agents of open lines may delegate to their Engineers-in-Chief, Executive Engineers or Assistant Engineers holding charge of a Division,

such power of purchase as they deem fit up to the limits specified for lines under construction, and to their Chief Storekeepers up to the limits specified for Executive Engineers.

(*d*) Army Department.

(i) Director-General of Military Works	Full powers.
(ii) Divisional Commanders and Director-General Indian Medical Service*	Rs.10,000
(iii) Officer Commanding an independent Brigade; Director-General of Ordnance;* Director of Equipment and Ordnance Stores*; Director, Royal Indian Marine; Director-General, Army Remount Department and Controller of Contracts attached to the Quartermaster-General, Army Headquarters	Rs.5,000
(iv) Officer Commanding a Brigade other than those included in (iii); Director of Ordnance Factories; Director of Ordnance Inspection and Director of Army Clothing Factories	Rs.2,000
(v) Superintendent, Army Clothing Factory; Supply and Transport Officer on special duty in Kashmir; and Deputy-Director, Royal Indian Marine ...	Rs.1,000
(vi) Chief of the General Staff; General Officer Commanding Northern and Southern Armies; Adjutant-General in India; Quartermaster-General in India; Director, Medical Services, India; Military Secretary to His Excellency the Commander-in-Chief; Military Accountant-General; Controllers of Military Accounts and Controller of Military Supply Accounts	Rs.500
(vii) Officer Commanding a Station; Superintendent, Army Remount Department; Superintendent, Ordnance Factory; Government Inspector of Army Boots, Cawnpore; Chief Ordnance Officer; Inspectors, Ordnance Department; the Chief Inspector of General Stores and the Proof and Experimental Officer, Balasore; Medical Storekeeper Commandant, Indian Staff College; Assistant Director of Supplies; Assistant Director of Transport; and Assistant Director of Grass Farms	Rs.400
(viii) Officer Commanding a unit (including a hospital); Senior Medical Officer, Indian Medical Service of a Station; Recruiting Officer for Gurkhas at Gorakpur; Officer (Ordnance or Departmental) in charge of depot; Assistant Inspectors (Ordnance Department), Officer in charge of Supply Reserve Depot; Commissioned Officer Commanding Depot, Transport Lines; Officer in charge of Supplies and Chief Chemical Examiner	Rs.40

(*e*) Stores Department, India.

(i) Chief Controller of Stores	Full powers.
(ii) Metallurgical Inspector, Jamshedpur	Rs.1,000

NOTE 1.—The financial limits imposed under this rule in respect of purchases made under Rule 3 (*a*) and 5 do not apply to the purchase of

* These officers have full powers of local purchase under Rule 5 in cases where the purchases are required to meet urgent field service requirements or to replace issues from mobilization reserves for the equipment of the troops suddenly ordered on field service.

articles required on mobilization or during the continuance of military operations.

NOTE 2.—These powers are subject to the rules of the budget system. No sanction may be given which will involve expenditure from the budget grant of any future year. The powers extend to each sanction, whether against Army, Military Works or Marine Funds. In the case of the Ordnance, Medical Stores, and Remount Departments, the Divisional Brigade and Station Commanders are not competent financial authorities.

In respect of Rule 3 (*c*)

Officers specially authorised to purchase plant and machinery and component parts thereof under Rule 3 (*c*) (i).

Rule 12.—*Power to Sanction departures from the Rules.*

The Government of India have power to sanction departures from the rules in cases in which such departure is absolutely unavoidable (subject to a report to the Secretary of State if the expenditure exceeds Rs.50,000).

RULES APPLICABLE TO GOVERNORS' PROVINCES.

Rule 13.—In the case of purchases made by local Governments, none of the above rules shall apply; provided that any such purchases, if from the United Kingdom, shall be made from the London Stores Department in accordance with any rules that may be made from time to time by the Secretary of State, the Government of India or the Director-General of Stores.

LIST A.

In Bengal.

Messrs. Burn and Company, of Calcutta.
Messrs. Jessop and Company, of Calcutta.
Messrs. John King and Company, of Calcutta.
Messrs. Martin and Company, of Calcutta.
Messrs. Mackintosh, Burn and Company, of Calcutta.
Messrs. James Simpson and Company, of Calcutta.
Messrs. G. Craddock and Company, of Calcutta.
Messrs. Turnbulls, Limited, of Calcutta.
Messrs. Braithwaite and Company, of Calcutta.
Messrs. J. C. Banerjee and Company, of Calcutta.

In the Bombay Presidency.

Messrs. Richardson and Cruddas, of Bombay.

In the Madras Presidency.

* * * * * * *

In Burma.

Messrs. Clark and Greig, Limited, Rangoon.

LIST B.

List of Officers, referred to in Rule 7 (iii), serving directly under the Government of India or in provinces other than Governors' provinces, who are authorised to obtain direct from manufacturers or dealers in England, America, Japan, or other foreign countries such articles as they may require for experimental or research purposes:—

Superintendents of X-ray Institutes.
Chemical Examiners.

Superintendents of Vaccine Depots.
Principals of Medical Colleges.
Superintendents of Medical Schools.
Directors of Bacteriological, Pathological or Research Laboratories, including officers in charge of Divisional and Brigade Laboratories.
Principals of Arts Colleges.
Principals of Technical and Industrial Institutes.
Directors of Industries.
Sanitary Commissioners.
Principals of Training Colleges.
Surveyor-General of India.
Inspector-General of Forests.
Director-General of Observatories.
Director of Botanical Survey.
Agricultural Adviser to the Government of India, and Director, Agricultural Research Institute, Pusa.
Imperial Bacteriologist, Civil Veterinary Department.
Imperial Agricultural Chemist.
Imperial Mycologist.
Imperial Entomologist.
Directors of Agriculture.
President, Forest Research Institute and College.
Director, Geological Survey of India.
Railway Board.
Directors of Public Instruction.
Director of the Zoological Survey of India.
Metallurgical Inspector.
Superintendent, Government Acetone Factory, Nasik.
Superintendent, Local Manufactures and Government Test House, Alipore.
Commissioner, Northern India Salt Revenue.
Director-General of Ordnance in India.
Director of Ordnance Factories.
Director of Ordnance Inspection.

LIST C.

In Bengal.

The Bengal Iron and Steel Company, Limited, Barakar.
The Vulcan Iron Works, Limited, of Calcutta.
Messrs. Burn and Company, of Calcutta.
Messrs. Jessop and Company, of Calcutta.
Messrs. John King and Company, of Calcutta.
Messrs. Ahmuty and Company, of Calcutta.
Messrs. Martin and Company, of Calcutta.
Messrs. Britannia Brass and Iron Company, Limited, of Calcutta.
Messrs. Heatly and Gresham, Limited, of Calcutta.
Messrs. A. and J. Main and Company, of Calcutta.
The Shalimar Works, Limited, of Calcutta and Chittagong.
Messrs. T. E. Thomson and Company, Limited, of Calcutta.
Messrs. W. Leslie and Company, of Calcutta.
Messrs. Balmer, Lawrie and Company, of Calcutta.
Messrs. Braithwaite and Company, of Calcutta.
Messrs. Turnbulls, Limited, of Calcutta.

In the Bombay Presidency.

Messrs. G. Gahagan and Company, of Bombay.
Messrs. Richardson and Cruddas, of Bombay.

Messrs. Alcock, Ashdown and Company, of Bombay.
Messrs. Garlick and Company, of Bombay.
Messrs. Marsland, Price and Company, of Bombay.
Messrs. Sorabji, Shapurji and Company, of Bombay.
Messrs. H. I. Dixon and Company, of Bombay.
Messrs. Crosser and Company, of Karachi.
Messrs. McKenzie and Company, of Karachi.
Messrs. B. R. Herman and Company, of Karachi.
The Engineering Company, of Karachi.

In the Madras Presidency.

Messrs. Massey and Company, of Madras.
Messrs. Oakes and Company, of Madras.
Arbuthnot's Industrials, Limited, Reliance Foundry, of Madras.
Messrs. Mansfield and Sons, of Madras.

In Burma.

The Irrawaddy Flotilla Company, Limited.
Messrs. Bulloch Brothers and Company, Limited, Rangoon.
The Dunnedaw Engineering Works, Rangoon.
Messrs. Howarth, Erskine, Limited, Singapore.
The Burma Engineering and Trading Company, Limited, Rangoon.

In the United Provinces.

Messrs. T. Crowley and Company, Allohabad.
The Empire Engineering Company, Limited, Cawnpore.
Lucknow Iron Works.
The Canal Foundry and Engineering Works, Roorkee.

In the Punjab.

Messrs. N. D. Hari Ram and Brothers, Rawalpindi.

In Bihar and Orissa.

Messrs. Arthur Butler and Company, of Muzarffarpur.
The Tata Iron and Steel Company, Limited, Jamshedpur.

APPENDIX XX. (*See* page 186.)

DESPATCH FROM THE GOVERNMENT OF INDIA TO PROVINCIAL GOVERNMENTS AND ADMINISTRATIONS.

Government of India, Department of Industries (Stores).

Dated, Delhi, the 29th March, 1921.

SIR,

I AM to invite your opinion on the accompanying draft of revised rules for the purchase of stores for the use of Government Departments. The necessity of re-casting the rules arises from the proposals of the Stores Purchase Committee, who have dealt with the question of the rules in their Report. The views of local Governments on the remaining proposals of the Committee are being asked in the letter from this Department, No. S.-183, dated the 29th March, 1921. Many of the

remarks and explanations contained in that letter will be found relevant to a consideration of the present subject under reference; but the Government of India consider that it will be more convenient to local Governments if the subject of the Stores Rules be dealt with separately. It will be observed that the rules have been divided into two parts, the latter of which applies to Governors' Provinces.

2. I am now to explain the tentative views of the Government of India regarding the draft rules which are attached to this letter.

Preamble.—It is obviously desirable, and the Government of India proposed to the Secretary of State in 1907, that a distinct declaration should be made in the rules of the policy of the Government of India in favour of the purchase of stores of indigenous manufacture.

Rule 1.—The expression "the price not unfavourable" appears to the Government of India preferable to the expression "the price reasonable" used by the majority of the Committee. The expression "not unfavourable" calls for a comparison of prices, but does not prevent the purchase of indigenous stores at a negligible excess cost. It also permits other factors of economy, such as promptitude of delivery, being taken into account. This is desirable, since there are many cases where no definite loss can be pointed to as likely to arise from delay, though there is a general advantage in promptitude.

Rule 2.—Condition (*b*), which deals with manufacture from imported materials, is less favourable to the Indian manufacturer than Rule 1, which relates to purely indigenous manufactures.

Rule 2 (*b*).—Postulates a stricter comparison of price than Rule 1. There are various instances (*e.g.*, the manufacture of wagons and girders from steel plates) in which manufacture from imported materials will shortly be in direct competition with manufacture from indigenous materials, and the necessity of the differentiation is of some importance.

Rule 3.—The Government of India have considered the desirability of modifying the form in which this rule is cast, but are of opinion that such a course is not at present desirable. In the draft rules prepared by the Government of India in 1907, purchase in India of imported stores was made the rule, to which certain exceptions were permitted. The present draft makes the purchase of such stores through the London Stores Department the rule, and local purchases the exception. In the opinion of the Government of India, though the form of the 1907 draft is theoretically preferable, it is safer to retain for the present the general prescription in favour of purchases from the London Stores Office, and to increase the number of exceptions as experience is gained, than to call on the new organisation proposed for the purchase of stores in India to work on so important a modification of the principles hitherto observed.

Rule 3 (*a*).—The Government of India have modified the draft of the Minority memorandum, so as to permit the purchase of articles which are on their way out to India, as is proposed in draft Rule 5.

Rule 3 (*c*).—This portion of the rule is based on the proposal made by the Government of India in 1913 and repeated in 1917, modified in deference to certain criticisms made by the Secretary of State. With reference to the general provisions of this rule in favour of purchases from branch firms, the Government of India are in full agreement with the views of the Industrial Commission (paragraphs 83 and 194 of their Report) and of the Stores Purchase Committee (paragraph 112 of their Report) that the setting up of branches of British manufacturing firms in India will encourage the development of local manufacture and is, indeed, in the case of many important industries, the only practical

means of introducing certain specialised forms of manufacture into the country. It was originally proposed to include a list of firms from which purchases might be made and of articles which might be purchased. The Government of India found that the list of articles gave great trouble in compilation, while this list and the list of firms are liable to constant changes; and it appears preferable to leave the compilation of these lists to the Chief Controller of Stores. The proposal to include fully equipped technical agents, who differ in name and legal constitution only from branches of firms, is necessary.

Condition (i) has been added by the Committee to meet the criticism of the Secretary of State that the ordering should be done by an expert, and not by an unspecialised departmental officer.

Condition (v).—The Government of India propose to raise the limit of Rs.20,000 to Rs.50,000.

Condition (vi).—The suggestion was made by the Secretary of State that plant which is of such a nature that defects in it may lead to loss of life or serious injury to the public service should be excluded entirely from the scope of this rule. Condition (vi) has been introduced to obviate the objection, the proposed condition of " works inspection " affording the necessary safeguard.

Rule 5.—The Government of India invite attention to the addition of the expression " in case of emergency " to the existing conditions " when inconvenience to the public service would be caused " and " when owing to the greater promptitude of supply an economy could be effected." This addition will enable purchases to be made without the necessity of proof that loss would occur if the indent were sent home. When a work is urgent and the risk of delay must be avoided, then, if it is known that stores of suitable quality and price can be procured in India, it is obviously sound to eliminate the risk, even if that risk cannot be exactly estimated.

Rule 7 (viii).—The Government of India's draft cancels the existing permission to purchase Australian lead locally; now that Burma lead of excellent quality is available, there seems to be no reason for this permission.

Rules 8 and 9 of the existing Stores Rules are omitted from the draft for obvious reasons.

Rule 8 (1).—The mention of specific sums representing interest, insurance and freight brokerage is omitted, since such charges are at present fluctuating.

Rule 11.—The sanctioning powers of purchasing officers are increased, and this partly follows from the general rise in prices. The separate limits which previously existed for purchases under Rules 3 and 5 should, the Government of India agree, now be amalgamated.

Rule 13.—This rule has been added in order to make effective the Government of India's proposal to grant full liberty, with one trifling exception, to local Governments in respect of their purchases of all classes of stores.

APPENDIX XXI. (*See* page 192.)

The Relation of the Government to the Railways.

Reproduced from the Indian Railway Administration Report for 1919-20.

Diversity of Relations between the State and Railways.

One of the special features of the Indian Railway system is the diversity of conditions that prevails in the relation of the State to the various lines in respect of ownership and control. Of the important lines situated in British India or in which the Government of India is interested, three (the North Western, Eastern Bengal, and Oudh and Rohilkhand Railways) are owned and worked by the State; eight (the East Indian, Great Indian Peninsula, Bombay, Baroda and Central India, Madras and Southern Mahratta, Assam-Bengal, Bengal-Nagpur, South Indian and Burma) are owned by the State, but worked on its behalf by companies enjoying a guarantee of interest from the Government; three important lines (the Bengal and North-Western, Rohilkund and Kumaon, and Southern Punjab) and many of less importance are the property of private companies, some being worked by the owning companies and some by the State or by the companies that work State-owned systems; several minor lines are the property of District Boards or enjoy a guarantee of interest granted by such Boards.

The diversity of conditions is in certain respects less important than might at first appear for the following reasons:—

The Government of India exercises under the Indian Railways Act, 1890, in respect of all railways in British India (and also, by virtue of arrangements with Indian States, in respect of the chief railways passing through such States), certain general powers. Thus a railway may not be opened until a Government Inspector has certified that it has been constructed so as to comply with requirements laid down by the Government and can be used for the public carriage of passengers without danger to them. The Government of India can also, in the interest of the safety of passengers, require a railway to be closed, or the use of particular rolling stock to be discontinued, or may prescribe conditions for the use of the railway or the rolling stock. They can appoint a Railway Commission to investigate complaints on certain matters such as the withholding of reasonable traffic facilities or the grant of undue preference.

In addition, the Government of India (or in some cases local Governments) exercise under the provisions of contracts detailed control over the management of all railways in British India greatly exceeding that which is secured by the Indian Railways Act. They also have a certain financial interest in all companies in British India, and a preponderating interest in most of the railways which are of the first importance.

History of Relations of the Government and Companies.

The main causes which have led to the present diversity of conditions in regard to the agency by which railways are managed, and the relations of the Government with the various classes of companies now in existence, are summarised in the following paragraphs:—

The first proposals for the construction of railways in India were submitted in 1844 to the East India Company in England by Mr. R. M.

Stephenson, afterwards Chief Engineer of the East Indian Railway, and others; they included the construction of lines by railway companies to be incorporated for the purpose and the guarantee by the East India Company of a specified return. A contract for the construction by the East Indian Railway Company of an experimental line of 100 miles from Calcutta towards Mirzapore or Rajmehal at an estimated cost of £1,000,000 was made in 1849, and a return of 5 per cent. was guaranteed by the East India Company on the capital; and a similar contract was made in the same year with the Great Indian Peninsula Railway Company for a line from Bombay to Kalyan at an estimated cost of £500,000. But the policy of entrusting generally the construction of Indian railways to guaranteed companies was not adopted until 1854 on the recommendation of Lord Dalhousie, who, in a minute, dated 20th April, 1853, explained his reasons for preferring the agency of companies, under the supervision and control of the Government, to the construction of lines on behalf of the Government by its own officers. He held that the State Engineer officers would make railways as well, and possibly as cheaply, and as expeditiously as companies; but that the withdrawal from other duties of the large number of officers required would be detrimental to the public interest, that the conduct of commercial undertakings did not fall within the proper functions of any Government and least of all within the functions of the Government of India, since the dependence of the population on the Government was, in India, one of the greatest drawbacks to the advance of the country, and that the country would therefore benefit by the introduction of English energy and English capital for railway purposes, with the possibility that such energy and capital would in due course be encouraged to assist in the development of India in other directions.

Old Guaranteed Railways.

The policy supported by Lord Dalhousie was adopted, and between 1854 and 1860 contracts for the construction of railways in India were made by the East India Company, or (after 1858) by the Secretary of State for India with the East Indian, Great Indian Peninsula, Madras, Bombay, Baroda and Central India, Scinde (afterwards the Scinde, Punjab and Delhi), Eastern Bengal, Great Southern of India (afterwards, when amalgamated with the Carnatic Railway Company—see below—the South Indian) and Calcutta and South-Eastern Railway Companies. Under these contracts the railway companies undertook to construct and manage specified lines, while the East India Company (or the Secretary of State for India) agreed to provide land and guaranteed interest on the capital, the rate fixed being in various cases 5, 4¾ and 4½ per cent. according to the market rates prevailing when the various contracts were made. Half of any surplus profits earned was to be used towards repaying to the Government any sums by which it had been called upon to supplement the net earnings of any previous period in order to make good the guarantee of interest; and the remainder was to belong to the shareholders. In practically all matters of importance, except the choice of staff, the companies were placed by the contracts under the supervision and control of the Government, which had power to decide on the standard and details of construction; the rolling-stock to be provided, the number, time and speed of trains; the rates and fares to be charged; the expenditure to be incurred; the standard of maintenance; and the form of accounts. The railways were to be held by the companies on leases terminating at the end of 99 years, and on such termination the fair value of their rolling-stock, plant and machinery was to be paid to them. But provision was also made to enable the Government to purchase the lines after 25 or 50 years on terms calculated to be the equivalent of the companies' interests therein, and also to enable the companies to surrender their lines to the Government and to receive in return their capital at par.

Early Attempts to Secure Funds for Railway Construction without a Guarantee.

An attempt to secure the construction of railways in India, on terms more favourable to the Government than those of the contracts with the original guaranteed companies, was first made in 1862, when a subsidy, but not a guarantee, was granted to the Indian Branch Railway Company which proposed to make feeders to the trunk lines in Northern India, and did actually make one such line. Similar assistance was granted later to the Indian Tramway Company, which made a short line in Madras. In 1864, the terms granted to the two companies mentioned were taken as a standard for general adoption with a view to the encouragement of similar companies. The chief provisions were that the Government, besides giving the necessary land free of costs, would grant an annual subsidy for 20 years at a rate not exceeding £100 per mile of line, with an addition in respect of large bridges costing more than £10,000. These terms failed to attract capital, and the two unguaranteed companies which had begun work found themselves after a few years unable to proceed without further assistance from the Government. Consequently, in 1867, a contract was entered into with the Indian Branch Railway Company (which soon after changed its name to the "Oudh and Rohilkhand Railway Company") by which the company was guaranteed interest at 5 per cent. per annum on the cost of certain lines to be carried out by it, on conditions similar to those laid down in the contracts of the period 1854-1860. Similarly, the Indian Tramway Company, after having been given in 1868 a guarantee of 3 per cent. per annum, went into liquidation in 1870, and became absorbed in a new company called the Carnatic Railway Company (afterwards amalgamated with the Great Southern of India Railway Company to form the South Indian Railway Company), with which the Secretary of State entered into a contract guaranteeing interest on its capital at 5 per cent. per annum. In 1869, Sir John Lawrence summed up the result of the experiment of the construction of railways by unguaranteed companies as follows:—"The Government of India has for several years been striving to induce capitalists to undertake the construction of railways in India at their own risk, and on their responsibility with a minimum of Government interference. But the attempt has entirely failed, and it has become obvious that no capital can be obtained for such undertakings otherwise than under a guarantee of interest fully equal to that which the Government would have to pay if it borrowed directly on its own account."

The attempt to encourage unguaranteed companies having thus been unsuccessful, it became necessary to decide whether the old practice of relying on guaranteed companies, of the type that had provided capital for, and had constructed, the first railways in India, should be continued. The Government of India expressed their objections to this course. They doubted whether their power of control over such companies secured the greatest possible economy in construction. They also disliked the arrangements under which they guaranteed the interest on the capital of companies, and thus became responsible for loss on working while having only a comparatively remote prospect of profiting by the result of successful working. Two important changes were consequently made in the practice that had been followed since the beginning of railway construction in India:—

(1) Arrangements were made with some of the most important of the guaranteed companies that, in lieu of the provision that half of any surplus profits was to be applied in repayment of sums advanced by the Government under the guarantee of interest, half of the surplus profits for each half-year should be the property of the Government. In consideration of this modification, the Government relinquished, in the case of three

companies, the Great Indian Peninsula, the Bombay, Baroda and Central India, and the Madras, its right to purchase the lines at the end of the first 25 years from the dates of the respective contracts.

(2) It was decided by the Secretary of State that the time had arrived when in both raising and expending such additional capital as might be required for new lines in India, the Government should secure to itself the full benefit of its own credit and of the cheaper methods which it was expected that it would be able to use. Accordingly, for several years after 1869, the chief capital expenditure on railways was incurred direct by the State and no fresh contracts with guaranteed companies were made except for small extensions. Among the lines constructed or begun by State agency and from State capital between 1869 and 1880 were the Indus Valley, Punjab Northern, Rajputana-Malwa, Northern Bengal, Rangoon and Irrawaddy Valley, and Tirhoot.

Progress in the Construction of Railways.

By the end of 1879, in about 25 years from the introduction of railways in India, 6,128 miles of railway had been constructed by companies which had expended, approximately, £97,872,000 (these figures include the Calcutta and South-Eastern and Nalhati Railways, which were constructed by companies but were purchased by the Government in 1868 and 1872, respectively). By the same date 2,175 miles of railway had been constructed by the Government at a cost of £23,695,226.

Introduction of Modified Guarantee Terms.

In 1880, the necessity for great and rapid extension of the railway system was urged by the Famine Commissioners, appointed after the great famine of 1878, who estimated that at least 5,000 miles were still necessary for the protection of the country from famine. It was held by the Government of the time that a limit was necessary on the capital borrowed annually; and it was clear that the limit fixed was not high enough to allow of such progress in railway construction as was desirable. With reference to this difficulty the Famine Commissioners remarked "that there would be manifest advantages in giving free scope to the extension of railways by private enterprise if it were possible; and, though the original form of guarantee has been condemned, it may not be impossible to find some substitute which shall be free from its defects, and may secure the investment of capital in these undertakings without involving the Government in financial or other liabilities of an objectionable nature."

Action in the direction suggested by the Commission was taken by the formation of three companies without a guarantee (the Bengal Central in 1881 and the Bengal and North-Western and Rohilkund and Kumaon in 1882) and three new guaranteed companies (Southern Mahratta in 1882, the Indian Midland in 1885, and the Bengal-Nagpur in 1887). The Bengal and North-Western and the Rohilkund and Kumaon Railway Companies are referred to more fully in a later paragraph. The Bengal Central Railway Company's operations were not successful at the outset, and a revised contract was entered into with the company, with effect from the 1st July, 1885, under which the Secretary of State guaranteed interest at 3½ per cent. on the company's capital, the balance of net earnings remaining after payment of interest on advances by the Secretary of State and debenture capital (but not the share capital) being divided between the Secretary of State and the company in the proportions of three-quarters to the former and one-quarter to the latter. The new

contract gave the Secretary of State the right to take possession of the line on the 30th June, 1905, or subsequently at intervals of 10 years, on repaying the company's capital at par. The rate of interest guaranteed to the Southern Mahratta Railway Company was also 3½ per cent.; in this case the balance of net earnings remaining after payment of interest on advances by the Secretary of State (but not on share or debenture capital) was divisible in the same way as in the case of the Bengal Central Railway Company. The guarantee to the Indian Midland and Bengal-Nagpur Railway Companies was 4 per cent.; and the Secretary of State was entitled to three-quarters of the surplus profits in excess of all interest charges. The lines constructed by the three companies last mentioned were declared to be the property of the Secretary of State, who had the right to determine the contracts at the end of approximately 25 years after their respective dates, or at subsequent intervals of 10 years, on repaying at par the capital provided by the companies.

The Assam-Bengal Railway Company was formed on similar lines in 1892, except that any surplus profits were to be divided between the Secretary of State and the company in proportion to the capital provided by each. The rate of guarantee in this case was 3½ per cent. for the first six years and thereafter 3 per cent. The Burma Railways Company was formed in 1897 to manage and develop the line in that province that had been constructed by the State. Interest at 2½ per cent. was guaranteed on the share capital raised by the company, and the surplus profits were originally divisible in the proportion of four-fifths to the Secretary of State and one-fifth to the company, but since 1908 the division has been proportional to the capital invested by each in the undertaking. The contract with the Burma Company is terminable by the Secretary of State in 1928, or on subsequent occasions, on repayment of the company's capital at par.

The terms of guarantee given to the companies formed since 1880 have thus been much more favourable to the Government than in the case of those formed before 1869.

Termination of Contracts of the Old Guaranteed Companies.

In dealing with the guaranteed companies formed before 1869 and with those formed in 1881 and subsequently, it has been the practice (except in the cases mentioned above, when the purchase of some of the old guaranteed lines was postponed in order to secure to the Government a share in surplus profits) to use in some way or other at the earlist possible date the right reserved by the Government of terminating the contracts of the various companies. The method of making use of this right has differed in different cases. The Eastern Bengal, Oudh and Rohilkhand, and Scinde-Punjab and Delhi lines were purchased and transferred to State management, the last named now forming part of the North Western Railway. Similarly, the Bengal Central line was purchased and made part of the Eastern Bengal Railway. The Madras and the Indian Midland lines were acquired but left, after acquisition, under the management of companies working other lines with which it was advantageous to amalgamate them. In all other cases (East Indian, South Indian, Great Indian Peninsula, Bombay, Baroda and Central India, Southern Mahratta, and Bengal-Nagpur) the course adopted has been to arrange for the continuance of management by the original company (or by a new company closely related to the old one), but to secure more favourable financial conditions for the State by one or more of the following methods: Reduction of the amount of capital retained by the companies in the undertakings, reduction of the rate of interest guaranteed by the State on such capital, and modification in favour of the Government of the clauses relating to the division of surplus profits.

ARRANGEMENTS BETWEEN THE GOVERNMENT AND COMPANIES AT PRESENT.

The relations between the Government and the guaranteed companies now working railways may be summarised as follows:—

The lines that they work are the property of the State.

The greater part of the capital is the property of the Government, either through having been originally supplied by it or through the acquisition by the Government of the greater part of the companies' interests on the termination of old contracts.

When funds are required for further capital expenditure, the Government has the option either of providing them or of calling on the company to provide them. The company receives guaranteed interest at a fixed rate on its capital; and similar payments out of the earnings are made to the Government. If, after these have been made, surplus profits remain, they are divided between the Government and the company in the various proportions provided for by the contracts. The company's share is in all cases only a small fraction of the Government's share.

All the contracts, except one, which is for a fixed term of 25 years, are terminable at the option of the Secretary of State, at specified dates; and on termination the company's capital is repayable at par (except in the case of the East Indian Railway Company, which is, for special reasons, to receive a terminable annuity instead of a cash payment).

The administrative control exercised by the Government over the companies is as follows:—

The company is bound to keep the line in good repair, in good working condition, and fully supplied with rolling-stock, plant, and machinery; to keep the rolling-stock in good repair and in good working condition; and to maintain a sufficient staff for the purposes of the line—all to the satisfaction of the Secretary of State.

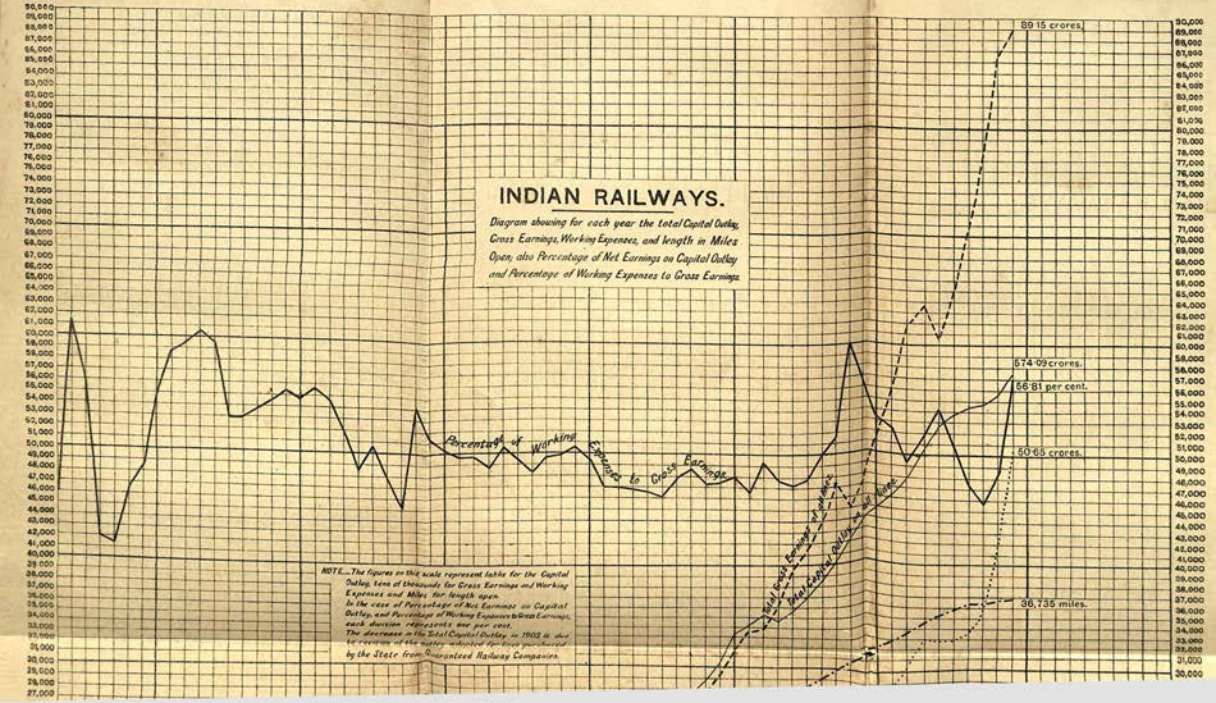
The Secretary of State may require the company to carry out any alteration or improvement in the line, or in the working that he may think necessary for the safety of the public or for the effectual working of the line.

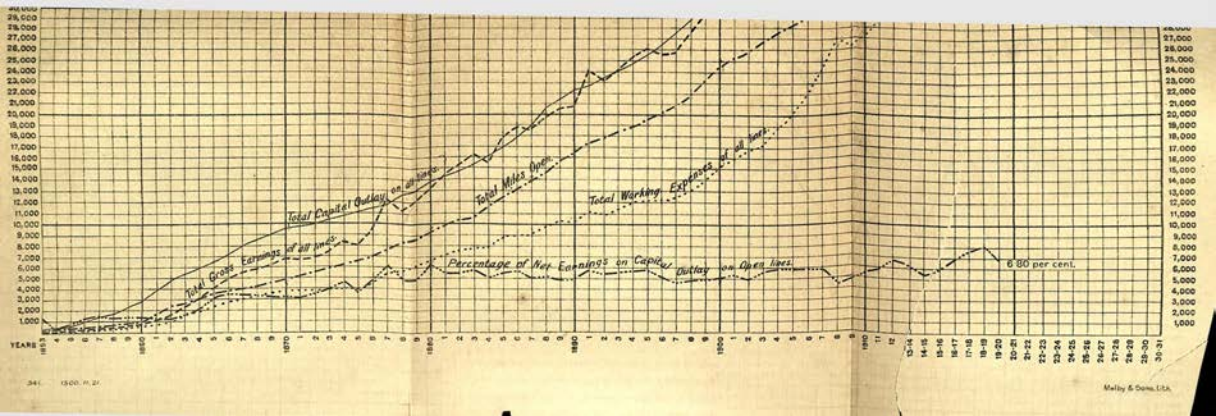
The Secretary of State may require the company to enter into agreements, on reasonable terms and conditions, with the administrations of adjoining railways for the exercise of running powers, for the supply to one another of surplus rolling-stock, for the interchange of traffic and rolling-stock and the settlement of through rates, and for additions and alterations to, or the redistribution of, existing accommodation in junctions or other stations in view to their convenient mutual use.

The train service is to be such as the Secretary of State may require. In order to secure a general control over the rates quoted by companies, the Secretary of State has retained power to settle the classification of goods and to authorise maximum and minimum rates within which the companies shall be entitled to charge the public for the conveyance of passengers and goods of each class.

The company has to keep such accounts as the Secretary of State may require, and these are subject to audit by the Secretary of State.

In all other matters relating to the line, the company is made subject to the supervision and control of the Secretary of State, who may appoint such persons as he may think proper for the purpose of inspecting the line, auditing the accounts, or otherwise exercising the power of supervision and control reserved to him. In particular,


INDIAN RAILWAYS.
Diagram showing for each year the total Capital Outlay, Gross Earnings, Working Expenses, and length in Miles Open, also Percentage of Net Earnings on Capital Outlay and Percentage of Working Expenses to Gross Earnings.
89·15 crores.
57·09 crores.
56·81 per cent.
50·65 crores.
36,735 miles.
Percentage of Working Expenses to Gross Earnings.
Net Earnings on Total Capital Outlay.
NOTE.—The figures on this scale represent lakhs for the Capital Outlay, tens of thousands for Gross Earnings and Working Expenses and Miles for length open.
In the case of Percentage of Net Earnings on Capital Outlay, and Percentage of Working Expenses to Gross Earnings, each division represents one per cent.
The decrease in the Total Capital Outlay in 1903 is due to revision of the rates adopted for lines purchased by the State from Guaranteed Railway Companies.


Total Capital Outlay on all lines.
Total Miles Open.
Total Working Expenses of all lines.
Total Gross Earnings of all lines.
Percentage of Net Earnings on Capital Outlay on Open lines.
6·80 per cent.
YEARS
Malby & Sons, Lith.

the Secretary of State has the right to appoint a Government Director to the Board of the company, with a power of veto on all proceedings of the Board. All the moneys received by the company in respect of the undertaking, whether on capital or revenue account, have to be paid over to the Secretary of State.

All expenditure by the company has to be stated and submitted for the sanction of the Secretary of State.

Thus, the Government has the preponderating financial interest in the lines worked by the two classes of guaranteed companies, those formed before 1869 and retained as working agencies with reduced capital after purchase, and those formed on terms more favourable to the State after 1880; it has exceedingly wide control over the methods of working; and it has the right of taking possession of the lines at specified times on repayment at par of the capital of the companies.

Other Lines Worked by Companies.

In addition to the lines referred to above, and apart from lines constructed by branch line companies, District Boards and Indian States, two lines of some importance have been constructed by companies which receive no direct assistance by the Government, namely, the Bengal and North-Western Railway and the Rohilkund and Kumaon Railway. (The Rohilkund and Kumaon Railway Company was guaranteed interest at 4 per cent. during construction and received for 10 years thereafter a subsidy of Rs. 20,000 per annum. This ceased in 1894.) While, however, these companies have no guarantee or other direct payment from the Government, they derive some advantage (partly through direct participation in profits and partly through reduction of expenses) from the fact that the working of certain State lines has been entrusted to them, the Tirhoot Railway to the former company and the Lucknow-Bareilly Railway to the latter. Their lines can be purchased by the State in 1932 on terms which are different in respect of the different sections of the lines, but are, on the whole, much more favourable to the companies than those provided for in the contracts with the guaranteed companies. Failing purchase in 1932, the lines will become the property of the State in 1981 on terms much less favourable to the companies. The general administrative control exercised by the State over these companies and the control over expenditure are similar to that which is exercised, as explained above, over guaranteed companies.

Controlling Authority.

The greater number of the powers for the detailed control of railways as described in the foregoing paragraphs are vested in the Railway Board. The Board consists of a President and two members with a Secretariat establishment.

APPENDIX

TABLE

Value of stores purchased by the Principal Railways during the

A.—Value of stores

B.—Value of imported

C.—Value of stores of

NOTE.—Materials invariably purchased in India such as bricks,

Classes.	Bengal-Nagpur.			Bombay, Baroda, and Central India.			Eastern Bengal.		
	A	B	C	A	B	C	A	B	C
(A) Bridge work ...	—	—	12	3,39	9	5	—	—	5
(B) Engineer's plant, excluding petty tools.	15	2	—	4	32	3	—	27	9
(C) Workshop machinery and heavy tools.	1,46	70	1	17	84	1	12	1,38	—
(D) Permanent-way—									
(*a*) Rails... ...	—	5	17,79	1,19	—	10,08	24,24	—	4,58
(*b*) Steel sleepers	16,90	—	—	—	—	—	—	—	—
(*c*) Cast-iron sleepers.	—	—	—	—	36	3,49	—	—	—
(*d*) Wooden sleepers.	—	—	14,45	—	—	16,78	—	—	12,66
(*e*) Chairs and fastenings.	40	57	5,48	2,05	94	4,61	2,31	6	36
(E) Rolling-stock—									
(*a*) Locomotives and spare parts.	7,51	1,08	16	7,29	99	5,19	11,83	27	—
(*b*) Coaching stock	—	—	—	1,15	29	—	5,48	—	—
(*c*) Goods stock...	3,83	—	—	38,44	7,95	—	78,52	—	—
(*d*) Spare parts coaching and goods stock.	48,50	10,71	1,69	1,08	5,85	6,73	8,18	94	80
(*e*) Motor cars ...	—	—	—	27	—	—	—	—	—
(F) Building and station materials and fencing.	21	46	60	33	2,61	52	3	51	79
(G) Tools and stores—									
(*a*) Tools and cutlery.	1,62	76	13	1,70	2,41	61	42	59	11
(*b*) Steel (excluding permanent-way materials).	4,31	4,04	1,12	3,08	5,76	97	1,03	89	27
(*c*) Iron (excluding permanent-way materials).	1,78	4,92	43	2,23	1,68	2,95	53	3,32	3,12
(*d*) Other metals	1,60	1,16	4	5,61	2,12	47	4	91	21
(*e*) Timber ...	—	—	9,16	—	—	19,20	—	—	—
(*f*) Oils	—	12,07	3,53	—	4,76	17,19	—	10,34	1,58
(*g*) Portland cement.	—	43	15	—	20	15	—	—	38
(*h*) *All other stores*	7,18	12,71	6,85	2,42	20,78	16,60	23	5,20	6,87
(*i*) *Electrical plant and materials.*	6,17	5,72	12	63	4,61	—	6	2,69	2
Total	1,01,62	55,40	61,83	71,07	62,56	1,05,63	1,33,02	27,37	31,89

XXIII. (*See* pages 193 and 195.)

A.

financial year 1919–20 *showing in thousands of rupees :—*
imported direct.
stores purchased in India.
Indian manufacture or of indigenous origin.
lime and mortar, timber, ballast, &c., &c., are not included.

East Indian.			Great Indian Peninsula.			Madras and Southern Mahratta.			North Western.		
A	B	C	A	B	C	A	B	C	A	B	C
—	1	1	—	—	—	—	—	—	—	—	2
53	1,33	—	1	58	13	16	3	—	44	50	14
2,50	1,19	—	1,40	1,78	1	1,38	5	1	6,84	67	9
34,96	—	4,66	19,16	—	10,49	12,57	—	10,04	—	—	15,00
—	—	—	—	—	—	—	—	—	—	—	—
—	2	—	—	—	—	—	—	93	—	—	9,04
—	—	13,46	—	—	15,63	—	—	17,18	—	—	3,28
11	—	49	4,53	—	1,10	2,53	22	2,67	23,74	—	3,82
21,92	7	—	6,08	44	19	8,93	37	20	51,83	37	27
—	—	—	—	—	—	5	—	29	—	—	—
*2,85,57	*2,70	—	—	—	—	3,24	—	—	—	—	47,61
—	—	—	28,56	3,06	9,24	7,68	91	20	55,89	5,45	1,78
—	—	—	—	16	—	—	—	—	8	6	—
2,84	59	1,68	1,50	6,73	2,22	28	30	13	82	1,43	1,91
1,32	90	—	82	2,99	24	1,46	54	15	3,27	76	37
7,06	26	13,01	1,50	7,89	4,74	1,42	1,21	49	17,56	1,10	1,13
3,23	9,30	26,95	1,05	45	1,95	1,69	2,87	1,49	—	30	5,71
4,93	2,22	3,28	1,02	48	4,73	1,84	89	30	—	79	19
—	42	6,88	—	—	17,11	—	—	9,56	—	1,76	66
—	19,73	3,30	—	15,75	7,64	—	8,48	90	—	17,58	12,55
—	—	—	—	1	97	—	—	79	—	—	18
9,85	24,75	47,50	3,81	21,80	1,44,01	5,16	4,39	8,37	22,67	5,86	5,17
2,56	2,01	—	90	6,25	1,06	50	1,59	—	5,40	3,26	3
3,77,38	65,50	1,21,22	70,34	68,37	2,21,46	48,89	21,85	53,70	1,88,54	39,89	1,08,95

* Including E (*b*), coaching-stock and E (*d*), spare parts is of coaching and goods stock.

TABLE

Value of stores purchased by the Principal Railways during the

A.—Value of stores
B.—Value of imported
C.—Value of stores of

NOTE.—Materials invariably purchased in India such as bricks,

Classes.	Oudh and Rohilkhand.			South Indian.			Assam-Bengal.		
	A	B	C	A	B	C	A	B	C
(A) Bridge work ...	—	—	—	1,64	—	—	83	—	—
(B) Engineer's plant excluding petty tools	—	19	16	8	17	—	1	19	4
(C) Workshop machinery and heavy tools	98	44	1	12	7	—	1	20	—
(D) Permanent-way :—									
(*a*) Rails ...	4,70	—	2,39	9,00	—	—	—	—	3,01
(*b*) Steel sleepers	—	—	—	—	—	—	—	—	—
(*c*) Cast-iron sleepers.	—	—	21	40	—	—	—	—	—
(*d*) Wooden sleepers	—	—	12,92	—	—	8,14	—	—	4,29
(*e*) Chairs and fastenings.	1,01	—	15	47	—	78	57	1	46
(E) Rolling-stock :—									
(*a*) Locomotives and spare parts.	3,79	8	—	3,85	10	—	7,45	51	11
(*b*) Coaching stock	—	—	—	—	—	—	—	—	—
(*c*) Goods stock...	21,08	—	—	10,85	*3,67	—	12,00	—	—
(*d*) Spare parts coaching and goods stock.	8,21	74	2	2,68	1,12	1	5,01	22	9
(*e*) Motor cars ...	—	—	—	—	—	—	—	—	—
(F) Building and station materials and fencing.	5	25	42	1	63	2	16	36	20
(G) Tools and stores :—									
(*a*) Tools and Cutlery.	16	62	9	25	36	7	11	32	6
(*b*) Steel (excluding permanent-way materials).	50	1,41	95	61	20	2	32	39	24
(*c*) Iron (excluding permanent-way materials).	37	22	37	57	1,28	77	—	8	3
(*d*) Other metals	27	12	80	1,08	83	4	15	15	18
(*e*) Timber ...	—	—	3,78	—	—	2,47	—	—	1,55
(*f*) Oil	—	5,55	3,42	—	4,31	4,60	—	71	2,64
(*g*) Portland cement.	—	—	11	—	1	17	—	—	33
(*h*) All other stores	72	2,77	14,50	4,37	3,15	24,29	28	2,34	1,35
(H) Electrical plant and materials.	1,43	49	—	2,08	63	14	2	54	2
Total... ...	43,27	12,88	40,30	38,06	16,53	41,52	26,92	6,02	14,60

*Represents the cost of materials purchased in replacement of supplies made to Overseas Forces.

B.

financial year 1919-20 *showing in thousands of rupees :—*
imported direct.
Stores purchased in India.
Indian manufacture or of indigenous origin.
lime and mortar, timber, ballast, &c., are not included.

Bengal and North-Western.			Burma.			Rohilkund and Kumaon.			Total expenditure for railways who have reported for 1919-20.		
A	B	C	A	B	C	A	B	C	A	B	C
—	—	—	3	—	—	—	—	—	5,89	10	25
—	1	—	—	8	5	—	1	—	1,42	3,70	64
4	1	2	1	11	—	8	3	—	15,11	7,47	16
—	—	—	6,96	—	1,01	—	—	2, 2	1,12,78	5	81,77
—	—	—	—	—	—	—	—	—	16,90	—	—
—	—	—	—	—	—	—	—	—	40	38	13,67
—	—	5,28	—	—	5,15	—	—	1,20	—	—	1,30,42
—	—	—	1,24	—	—	44	2	61	39,40	1,82	20,53
10,52	5	—	2,20	—	—	30	6	3	1,43,50	4,39	6,15
—	—	—	1	—	—	13	6	—	6,82	35	29
*3,90	*23	*4	12,29	21	25	1,40	3	—	†4,71,12	†14,79	†47,90
—	5	—	5	2	3	7	—	1	1,65,91	29,07	20,60
—	—	—	—	—	—	—	53	3	35	75	3
—	7	6	1,03	58	9	—	2	—	7,26	14,54	8,64
51	21	6	25	9	2	—	16	3	11,89	10,71	1,94
5	4	—	39	35	24	8	19	—	37,91	23,73	23,18
71	64	21	2	12	9	13	24	—	12,31	25,42	44,07
91	43	10	4	35	—	25	31	2	17,74	10,76	* 10,36
—	—	1,50	—	—	15	—	—	9	—	2,18	72,11
—	3,65	38	—	66	2,28	—	71	20	—	1,04,30	60,21
—	1	3	29	9	8	—	1	—	29	76	3,34
1,32	1,73	2,15	1,81	2,07	3,67	14	71	1,26	59,96	1,08,26	2,82,59
51	22	2	32	22	—	9	13	—	20,67	28,36	1,41
18,47	7,35	9,85	26,94	4,95	13,11	3,11	3,22	6,20	11,47,63	‡3,91,89	8,30,26

* Including coaching stock.

† Includes the value of coaching stock and spare parts of coaching and goods stock on the East Indian Railway and that of coaching stock only on the Bengal and North Western Railway.

‡ Includes Rs. 3,67,000 being the cost of materials purchased by the South Indian Railway in replacement of supplies made to Overseas Forces.

APPENDIX XXIV. (*See* page 197.)

Main Results of Working of all Indian Railways Treated as One System.

Serial number.	Particulars.		1915-16.	1916-17.	1917-18.	1918-19.	1919-20
1	2		3	4	5	6	7
1	Mileage open at close of the year	Miles	35,833	36,286	36,333	36,616	36,735
2	Total Capital outlay, including ferries and suspense, on open lines (in thousands of rupees).	Rs.	5,29,98,29	5,35,27,97	5,41,79,90	5,49,74,45	5,66,37,77
3	Gross earnings (in thousands of rupees) ...	,,	64,66,04	70,68,42	77,36,39	86,28,68	89,15,32
4	Gross earnings per mile open	,,	18,041	19,480	21,292	23,565	24,269
5	Gross earnings per mile open per week ...	,,	347	375	409	453	467
6	Gross earnings per train-mile	,,	4·07	4·32	4·93	5·44	5·50
7	Total working expenses (in thousands of rupees).	,,	32,91,95	33,40,32	35,36,87	41,80,17	50,65,65
8	Working expenses per mile open	,,	9,185	9,206	9,734	11,416	13,789
9	Working expenses per train-mile	,,	2·07	2·04	2·25	2·64	3·13
10	Percentage of working expenses to gross earnings.	Per cent.	50·91	47·26	45·72	48·45	56·81
11	Net earnings (in thousands of rupees) ...	Rs.	31,74,09	37,28,10	41,99,52	44,48,51	38,49,67
12	Net earnings per mile open	,,	8,856	10,274	11,558	12,149	10,480
13	Net earnings per train-mile	,,	2·00	2·28	2·68	2·80	2·37
14	Percentage of net earnings on total capital outlay (item 2).	Per cent.	5·99	6·96	7·75	8·09	6·80

15	Coaching train-miles (in thousands)	Train-miles	56,364	55,719	44,407	44,117	52,092
16	Goods train-miles (in thousands)	„	62,766	68,083	72,528	74,283	70,061
17	Mixed train-miles (in thousands)	„	34,471	34,874	34,618	34,240	34,169
18	Total, including miscellaneous, train-miles (in thousands).	„	159,038	163,604	157,036	158,588	162,161
19	Unit-mileage of passengers (in thousands) ...	Unit-miles	16,528,646	17,846,064	16,204,392	18,039,577	20,614,612
20	Freight ton-mileage of goods (in thousands)	Ton-miles	17,157,841	19,825,901	21,015,126	22,140,806	20,401,656
21	Average miles a ton of goods was carried ...	Miles	207·98	230·08	245·87	242·88	232·33
22	Average rate charged for carrying a ton of goods one mile.	Pies	4·34	4·01	4·08	4·26	4·43
	Average miles a passenger was carried.						
23	1st class	Miles	113·18	126·60	124·99	133·83	139·16
24	2nd class	„	93·44	106·88	96·58	90·64	85·63
25	Intermediate class	„	50·20	52·17	71·54	75·37	75·85
26	3rd class	„	36·60	37·56	38·91	40·68	40·73
27	Season and Vendors' tickets	„	8·52	8·46	8·54	8·81	9·18
28	Total	„	35·59	36·82	37·66	39·24	39·64
	Average rate charged per passenger per mile.						
29	1st class	Pies	13·68	13·32	16·58	15·28	16·04
30	2nd class	„	5·50	5·07	6·76	7·15	7·59
31	Intermediate class	„	3·16	3·14	4·02	4·17	4·21
32	3rd class	„	2·29	2·32	2·78	2·86	2·84
33	Season and Vendors' tickets	„	1·42	1·43	1·50	1·49	1·54
34	Total	„	2·44	2·48	2·99	3·08	3·09

APPENDIX XXV. (*See* page 203.)

A.

Royal Air Force Landing Grounds in India Available for Use by Civilian Aircraft.

Name.	Class.
Agra	L.G.
Akora	E.L.G.
Ambala	Aerodrome.
Amritsar	E.L.G.
Badhber	E.L.G.
Campbellpore	E.L.G.*
Cawnpore	Aerodrome.
Chaklala	L.G.
Delhi	L.G.
Dera Ismail Khan	L.G.
Dina	E.L.G.
Ferozepore	L.G.
Gujar Khan	E.L.G.
Hassan Abdul	E.L.G.
Hyderabad (Sind)	L.G.
Jacobabad	E.L.G.
Jhansi	L.G.
Jhelum	L.G.
Jullundur	L.G.
Karachi	Aerodrome.
Karnal	E.L.G.
Khanpur	L.G.
Khushab	E.L.G.*
Lahore	Aerodrome.
Leiah	E.L.G.*
Lodhran	E.L.G.
Mandra	E.L.G.
Meerut	L.G.
Mianwali	L.G.
Montgomery	L.G.
Multan	L.G.
Muttra	E.L.G.
Pad Idan	E.L.G.
Palwal	E.L.G.
Quetta	Aerodrome.
Reti	E.L.G.*
Risalpur	Aerodrome.
Riwat	E.L.G.
Roorkee	L.G.
Sibi	L.G.
Sohawa	E.L.G.
Sukheke	E.L.G.*
Sukkur	L.G.
Wazirabad	E.L.G.*

B.

Government Civil Landing Grounds.

Rangoon-Calcutta-Allahabad-Bombay Air Route.

Name.	Class.
Rangoon	Aerodrome.
Letpadan	E.L.G.
Prome	E.L.G.
Thayetmyo	E.L.G.

* Not yet completed.

Name.	Class.
*Akyab	L.G.
Maungdaw	E.L.G.
Cox's Bazar	E.L.G.
Chittagong	L.G.
Comilla	E.L.G.
Dacca	L.G.
Jessore	E.L.G.
†Calcutta (Dum Dum)	Aerodrome.
Burdwan	E.L.G.
Titalmari	E.L.G.
Gaya	L.G.
Dehri-on-Sone	E.L.G.
Mughal Serai	E.L.G.
‡Allahabad (Bamraoli)	Aerodrome.
Markundi	E.L.G.
Katni	E.L.G.
Jubbulpore	L.G.
Bobai	E.L.G.
Hoshangabad	E.L.G.
Khandwa	E.L.G.
Bhusawal	L.G.
Manmad	E.L.G.
Deolali	E.L.G.
§Bombay	Aerodrome.

C.

Other Landing Grounds.

Fatehpur.
Victoria Point (South Burma).

Note.—
*Akyab.—An emergency landing ground already exists.
†Calcutta.—A landing ground already exists.
§Bombay.—A landing ground already exists.
‡Allahabad.—A landing ground is under construction.

At all other places only sites have been selected.

APPENDIX XXVI. (*See* page 205.)

Statement showing for each Quarter the number of C.O.D. parcels Exchanged with the United Kingdom and the Trade Charges Recoverable thereon.

Date.	C.O.D. Parcels sent to United Kingdom.		C.O.D. Parcels received from the United Kingdom.	
	Number.	Charges recoverable in Rupees.	Number.	Charges recoverable in £.
1920.				
*April—June ...	235	11,204	1,238†	4,843†
July—Sept.	233	9,829	4,949	12,900
Oct.—Dec.	215	8,947	7,022	25,118
1921.				
Jan.—March ...	170	4,925	7,517	25,550
April...	60	1,563	2,527	8,388

* 11 weeks only. † May to June only.

APPENDIX XXVII. (*See* page 217.)

STATEMENT OF SALES OF REVERSE COUNCILS FROM JANUARY TO SEPTEMBER, 1920.

(Figures in thousands of £.)

Date of sale.	Rate for immediates.	Amount offered at each sale	Amount applied for at each sale.	Amount sold at each sale.	Progressive total of amount sold.
	s. d.				
2nd January, 1920	2 $3\frac{29}{32}$	1,000	770	770	770
8th „ „	2 $3\frac{29}{32}$	1,000	8,499	990	1,760
15th „ „	2 $3\frac{29}{32}$	2,000	300	300	2,060
22nd „ „	2 $3\frac{29}{32}$	2,000	4,890	2,000	4,060
29th „ „	2 $3\frac{29}{32}$	2,000	1,334	1,334	5,394
5th Febuary, 1920	2 $8\frac{13}{16}$	2,000	32,390	2,000	7,394
12th „ „	2 $10\frac{27}{32}$	5,000	41,312	5,000	12,394
19th „ „	2 $10\frac{7}{32}$	2,000	122,335	2,000	14,394
26th „ „	2 $10\frac{3}{16}$	2,000	78,417	2,000	16,394
3rd March, 1920	2 $10\frac{1}{32}$	2,000	64,931	2,000	18,394
11th „ „	2 $8\frac{29}{32}$	2,000	117,185	2,000	20,394
18th „ „	2 $7\frac{5}{16}$	2,000	153,559	2,000	22,394
25th „ „	2 $5\frac{31}{32}$	2,000	56,295	2,000	24,394
31st „ „ ... ... }	2 $4\frac{13}{16}$	2,000	35,050	1,988	26,382
1st April, 1920 ... ... }					
8th „ „	2 $4\frac{5}{32}$	2,000	16,721	2,000	28,382
15th „ „	2 $4\frac{7}{16}$	2,000	48,270	2,000	30,382
22nd „ „	2 $4\frac{17}{32}$	2,000	59,020	2,000	32,382
29th „ „	2 $5\frac{7}{8}$	1,000	53,210	1,000	33,382
6th May, 1920	2 $5\frac{3}{16}$	1,000	89,514	1,000	34,382
13th „ „	2 $5\frac{11}{32}$	1,000	101,625	1,000	35,382
20th „ „	2 $5\frac{1}{2}$	1,000	122,279	1,000	36,382
26th „ „	2 $5\frac{13}{32}$	1,000	85,620	1,000	37,382
3rd June, 1920	2 5	1,000	101,821	1,000	38,382
10th „ „	2 $4\frac{27}{32}$	1,000	109,245	1,000	39,382
15th „ „	2 $4\frac{5}{8}$	1,000	122,991	1,000	40,382
24th „ „	1 $11\frac{29}{32}$	1,000	73,391	1,000	41,382
1st July, 1920	1 $11\frac{29}{32}$	1,000	106,751	1,000	42,382
8th „ „	1 $11\frac{29}{32}$	1,000	63,690	1,000	43,382
15th „ „	1 $11\frac{29}{32}$	1,000	101,830	1,000	44,382
22nd „ „	1 $11\frac{29}{32}$	1,000	103,960	1,000	45,382
29th „ „	1 $11\frac{29}{32}$	1,000	75,486	1,000	46,382
5th August, 1920	1 $11\frac{29}{32}$	1,000	101,260	1,000	47,383
12th „ „	1 $11\frac{29}{32}$	1,000	112,230	1,000	48,382
19th „ „	1 $11\frac{29}{32}$	1,000	114,767	1,000	49,382
26th „ „	1 $11\frac{29}{32}$	1,000	117,390	1,000	50,382
2nd September, 1920	1 $11\frac{29}{32}$	1,000	126,425	1,000	51,382
7th „ „	1 $11\frac{29}{32}$	1,000	117,200	1,000	52,382
13th „ „	1 $11\frac{29}{32}$	1,000	115,095	1,000	53,382
21st „ „	1 $11\frac{29}{32}$	1,000	122,590	1,000	54,382
28th „ „	1 $11\frac{29}{32}$	1,000	120,050	1,000	55,382

APPENDIX XXVIII. (*See* page 233.)

TARIFF SCHEDULES FOR THE TEN MONTHS MARCH TO DECEMBER, 1921.

Reprint of Schedules II and III of the Indian Tariff Act, VIII of 1894 (as subsequently amended), showing the rates of Customs duties levied on goods imported into, and exported from, British India.

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	I.—FOOD, DRINK AND TOBACCO.			
	FISH.		Rs. A.	
1	Fish, Salted, wet or dry	Indian maund of 82⅔ lbs. avoirdupois weight.	—	Such rate or rates of duty not exceeding twelve annas as the Governor - General in Council may, by notification in the *Gazette of India*, from time to time prescribe.
2	Fishmaws, including singally and sozille, and sharkfins	—	*Ad valorem*	11 per cent.
3	Fish, excluding salted fish (*see* No. 1)	—	„	11 „
	FRUITS AND VEGETABLES.			
4	Fruits and Vegetables, all sorts, fresh, dried, salted or preserved ...			
	Almonds without shell	cwt.	85 0	11 per cent
	„ in the shell	„	26 0	11 „
	„ (kágazi) { Persian	„	125 0	11 „
	„ (kágazi) { European, including half-hard round almonds	„	45 0	11 „

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	I.—FOOD, DRINK AND TOBACCO—*contd.*			
	FRUITS AND VEGETABLES—*contd.*			
	Fruits and Vegetables, &c.—*contd.*		Rs. A.	
	Cashew or cajoo kernels	cwt.	28 0	11 per cent.
	Cocoanuts, Straits and Dutch East Indies	thousand	100 0	11 ,,
	,, Maldives	,,	40 0	11 ,,
	,, other	,,	62 0	11 ,,
	,, kernel (khopra)	cwt.	27 0	11 ,,
	Currants	,,	45 0	11 ,,
	Dates, dry, in bags	,,	15 0	11 ,,
	,, wet ,, baskets and bundles	,,	9 0	11 ,,
	,, ,, in pots, boxes, tins and crates	,,	14 0	11 ,,
	Figs, Persian, dried	,,	18 0	11 ,,
	Garlic	,,	12 0	11 ,,
	Pistachio nuts	,,	100 0	11 ,,
	Raisins, Munakka, Persian Gulf	,,	16 0	11 ,,
	,, other sorts	—	*Ad valorem*	11 ,,
	All other sorts of fruits and vegetables, fresh, dried, salted or preserved.	—	,,	11 ,,
	GRAIN, PULSE AND FLOUR.			
5	Grain and Pulse, all sorts, including broken grains and pulse, but excluding flour (*see* No. 6).	—	*Ad valorem*	2½ per cent.
6	Flour	—	,,	11 ,,
7	Fodder, Bran and Pollards	—	,,	2½ ,,

	Liquors.			Rs. A. P.
8	Ale, Beer, Porter, Cider and other fermented liquors	Imperial gallon or 6 quart bottles.	—	0 6 6
9	Liqueurs, Cordials, Mixtures and other preparations containing spirit—			
	(*a*) Entered in such a manner as to indicate that the strength is not to be tested.	,,	—	25 0 0
	(*b*) If tested	Imperial gallon or 6 quart bottles of the strength of London proof.	—	18 12 0 and the duty to be increased or reduced in proportion as the strength of the spirit exceeds or is less than London proof.
10	Perfumed Spirits	Imperial gallon or 6 quart bottles.	—	30 0 0
11	Spirit, which has been rendered effectually and permanently unfit for human consumption.	—	*Ad valorem*	7½ per cent.
12	All other sorts of Spirit	Imperial gallon or 6 quart bottles of the strength of London proof.	—	18 12 0 and the duty to be increased or reduced in proportion as the strength of the spirit exceeds or is less than London proof
13	Wines—			
	Champagne and all other sparkling wines not containing more than 42 per cent. of proof spirit.	Imperial gallon or 6 quart bottles.	—	9 0 0
	All other sorts of wines not containing more than 42 per cent. of proof spirit.	,,	—	4 8 0
	Provided that all sparkling and still wines containing more than 42 per cent. of proof spirit shall be liable to duty at the rate applicable to " All other sorts of Spirit."			

No.	Names of Articles.	Per	Tariff Valuation.	Duty
	I.—FOOD, DRINK AND TOBACCO—*contd.*		Rs. A.	
	PROVISIONS AND OILMAN'S STORES.			
14	Vinegar, in casks	—	*Ad valorem*	2½ per cent.
15	Provisions, Oilman's Stores, and Groceries, all sorts, excluding vinegar in casks (*see* No. 14)—			
	Butter	lb.	2 0	11 per cent.
	Cassava, Tapioca or Sago (whole)	cwt.	15 0	11 ,,
	,, ,, ,, (flour)	,,	11 0	11 ,,
	China preserves in syrup	box of six large or twelve small jars.	10 0	11 ,,
	,, ,, dry, candied	lb.	0 8	11 ,,
	Cocum	cwt.	10 0	11 ,,
	Ghi	,,	75 0	11 ,,
	Vinegar not in casks	—	*Ad valorem*	11 ,,
	All other sorts of provisions, oilman's stores and groceries ...	—	,,	11 ,,
	SPICES.			
16	Spices, all sorts—			
	Betelnuts, raw, whole, split, or sliced, also red whole from Goa ...	cwt.	11 0	11 per cent.
	Betelnuts, raw, whole, split, or sliced, also red whole from Straits	,,	11 0	11 ,,
	Betelnuts, boiled, split or sliced	,,	12 8	11 ,,
	,, whole, from Ceylon	,,	14 0	11 ,,
	,, raw, split (sun-dried) from Ceylon	,,	28 0	11 ,,
	,, all other sorts	—	*Ad valorem*	11 ,,
	Chillies, dry	cwt.	25 0	11 ,,
	Cloves	,,	62 0	11 ,,
	,, exhausted	,,	20 0	11 ,,
	,, stems and heads	,,	9 0	11 ,,
	,, in seeds, narlavang		20 0	11 ,,

	Ginger, dry	cwt.	35 0	11	„
	Mace	lb.	0 12	11	„
	Nutmegs	„	0 4	11	„
	„ in shell	„	0 3	11	„
	Pepper, black	cwt.	38 0	11	„
	„ white	„	65 0	11	„
	All other sorts of spices	—	*Ad valorem*	11	„
	Sugar.				
17	Confectionery	—	*Ad valorem*	20 per cent.	
18	Sugar, all sorts, including Molasses and Saccharine produce of all sorts, but excluding confectionery (*see* No. 17)—				
	Sugar, crystallised and soft, from Java, 23 Dutch standard and above.	cwt.	32 4	15 per cent.	
	from Java, 16 to 22 Dutch standard	„	30 4	15	„
	„ „ „ „ from Java, 15 Dutch standard and under.	„	29 12	15	„
	„ „ „ „ from Japan or Formosa	„	34 4	15	„
	„ „ „ „ refined in China	„	34 4	15	„
	„ „ „ „ from Egypt	„	33 4	15	„
	„ „ „ „ from Mauritius	„	30 12	15	„
	„ „ „ beet	„	32 4	15	„
	Molasses from Java	„	5 10	15	„
	„ „ other countries	„	5 10	15	„
	Sugar, all other sorts, including saccharine produce of all kinds	—	*Ad valorem*	15	„
	Tea.				
19	Tea—				
	Tea, black	lb.	0 12	11 per cent.	
	„ green	„	0 14	11	„

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	I.—FOOD, DRINK AND TOBACCO—*concld.*			
	OTHER FOOD AND DRINK.		Rs. A.	
20	Coffee	cwt.	42 0	11 per cent.
21	Hops	—	—	Free.
22	Salt, excluding Salt exempted under No. 23	Indian maund of 82⅔ lbs. avoirdupois weight.	—	The rate at which excise duty is for the time being leviable on salt manufactured in the place where the import takes place.
23	Salt imported into British India and issued, in accordance with rules made with the previous sanction of the Governor-General in Council, for use in any process of manufacture; also salt imported into the port of Calcutta and issued with the sanction of the Government of Bengal to manufacturers of glazed stone-ware; also salt imported into any port in the provinces of Bengal and Bihar and Orissa and issued, in accordance with rules made with the previous sanction of the Governor-General in Council, for use in curing fish in those provinces.	—	—	Free.
24	All other sorts of Food and Drink not otherwise specified	—	*Ad valorem*	11 per cent.
	TOBACCO.			Rs. A.
25	Tobacco, unmanufactured	lb.	—	1 0
26	Cigars and Cigarettes	—	*Ad valorem*	75 per cent.
				Rs. A.
27	All other sorts of Tobacco, manufactured	lb.	—	2 4

II.—RAW MATERIALS AND PRODUCE AND ARTICLES MAINLY UNMANUFACTURED.

			Rs. A.	Rs. A.
	COAL, ETC.			
28	Coal, Coke and Patent Fuel	ton.	—	0 8
	GUMS, RESINS AND LAC.			
29	Gums, Resins and Lac, all sorts—			
	Gambier, block	cwt.	28 0	11 per cent.
	,, cube	,,	28 0	11 ,,
	,, other sorts	—	*Ad valorem*	11 ,,
	Gum Ammoniac	cwt.	30 0	11 ,,
	,, Arabic	,,	24 0	11 ,,
	,, Benjamin, ras	,,	25 0	11 ,,
	,, ,, cowrie	,,	65 0	11 ,,
	,, Bysabol (coarse myrrh)	,,	60 0	11 ,,
	,, Olibanum or frankincense	,,	15 0	11 ,,
	,, Persian (false)	,,	18 0	11 ,,
	Myrrh	,,	60 0	11 ,,
	Resin	,,	28 0	11 ,,
	All other sorts of gums, gum-resins, and articles made of gum or gum-resin.	—	*Ad valorem*	11 ,,
	HIDES AND SKINS, RAW.			
30	Hides and Skins, raw or salted	—	—	Free.
	METALLIC ORES, AND SCRAP IRON OR STEEL FOR RE-MANUFACTURE.			
31	Iron or Steel, old	cwt.	3 8	2½ per cent
32	Metallic Ores, all sorts	—	—	Free.

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	II.—RAW MATERIALS AND PRODUCE AND ARTICLES MAINLY UNMANUFACTURED—*contd.*			
	OILS.		Rs. A.	Rs. A. P.
33	Petroleum, including also naphtha and the liquids commonly known by the names of rock-oil, Rangoon oil, Burma oil, kerosine, paraffin oil, mineral oil, petroline, gasoline, benzol, benzoline, benzine, and any inflammable liquid which is made from petroleum, coal, schist, shale, peat or any other bituminous substance, or from any products of petroleum, but excluding the following classes of petroleum.*	Imperial gallon.	—	0 1 6
34	Petroleum which has its flashing point at or above two hundred degrees of Fahrenheit's thermometer and is proved to the satisfaction of the Collector of Customs to be intended for use exclusively for the batching of jute or other fibre, or for lubricating purposes, and Petroleum which has its flashing point at or above one hundred and fifty degrees of Fahrenheit's thermometer and is proved to the satisfaction of the Collector of Customs to be intended for use exclusively as fuel or for some sanitary or hygienic purpose.	—	*Ad valorem*	7½ per cent.
35	All sorts of animal, essential, mineral, and vegetable non-essential Oils excluding petroleum as defined in Nos. 33 and 34—			
	Coconut oil	cwt.	37 8	11 per cent.
	All other sorts of oil	—	*Ad valorem*	11 „
	SEEDS.			
36	Oil-seeds, imported into British India by sea from the territories of any Prince or Chief in India.	—	—	Free.
37	Seeds, all sorts, excluding oil-seeds specified in No. 36	—	*Ad valorem*	11 per cent.

* Motor spirit is liable to an additional duty of six annas per gallon under Act II of 1917 as amended by Act III of 1919.

	Tallow, Stearine and Wax.			
38	Tallow and Stearine, including grease and animal fat, and Wax of all sorts, not otherwise specified.	—	Rs. a. *Ad valorem*	11 per cent.
	Textile Materials.			
39	Cotton, raw	—	—	Free.
40	Wool, raw	—	—	Free.
41	Textile Materials, the following:—			
	Silk waste and raw silk including cocoons:— ...			
	Bokhara	lb.	8 8	11 per cent.
	Floss	—	*Ad valorem*	11 „
	Raw silk—Yellow Shanghai, including re-reeled	lb.	7 8	11 „
	„ from Indo-China, and places in China other than Shanghai including re-reeled.	„	10 0	11 „
	Mathow	„	5 12	11 „
	Panjam	„	4 12	11 „
	Persian	„	6 0	11 „
	Siam	„	8 0	11 „
	White Shanghai, Thonkoon or Duppion	„	5 8	11 „
	„ „ other kinds including re-reeled ...	„	8 8	11 „
	„ other kinds of China, including re-reeled ...	„	10 0	11 „
	Waste and Kachra	—	*Ad valorem*	11 „
	All other sorts, including cocoons	—	„	11 „
	Raw Flax, Hemp, Jute and all other unmanufactured textile materials not otherwise specified.	—	„	11 „
	Wood and Timber.			
42	Firewood	—	*Ad valorem*	2½ „
43	Wood and Timber, all sorts, not otherwise specified, including all sorts of ornamental wood.	—	„	11 „

No.	Names of Articles.	Per.	Tariff Valuation.	Duty.
	II.—RAW MATERIALS AND PRODUCE AND ARTICLES MAINLY UNMANUFACTURED—*contd.*		Rs. A.	
	MISCELLANEOUS.			
44	Canes and Rattans	—	*Ad valorem*	11 per cent.
45	Cowries and Shells—			
	Cowries, bazar, common	cwt.	6 0	11 „
	„ yellow, superior quality	„	7 0	11 „
	„ Maldive	„	11 0	11 „
	„ Sankhli	„	135 0	11 „
	Mother-of-pearl, nacre	„	25 0	11 „
	Nakhla	„	175 0	11 „
	Tortoise-shell	lb.	14 0	11 „
	„ nakh	„	3 0	11 „
	All other sorts, including articles made of shell, not otherwise described.	—	*Ad valorem*	11 „
46	Ivory, unmanufactured—			
	Elephants' grinders	cwt.	300 0	11 „
	„ tusks (other than hollows, centres, and points), each exceeding 20 lb. in weight, and hollows, centres, and points each weighing 10 lb. and over.	„	900 0	11 „
	Elephants' tusks (other than hollows, centres, and points), not less than 10 lb. and not exceeding 20 lb. each, and hollows, centres, and points each weighing less than 10 lb.	„	725 0	11 „
	Elephants' tusks, each less than 10 lb. (other than hollows, centres, and points).	„	400 0	11 „
	Sea-cow or moye teeth, each not less than 4 lb.	cwt.	225 0	11 „
	Sea-cow or moye teeth, each not less than 3 lb. and under 4 lb. ...	„	175 0	11 „
	Sea-cow or moye teeth, each less than 3 lb.	„	125 0	11 „
	All other sorts unmanufactured not otherwise specified	—	*Ad valorem*	11 „

47	Manures, all sorts, including animal bones and the following chemical manures:—Basic slag, nitrate of ammonia, nitrate of soda, muriate of potash, sulphate of ammonia, sulphate of potash, kainit salts, nitrate of lime, calcium cyanamide, mineral phosphates and mineral superphosphates.	—	—	Free.
48	Precious Stones, unset and imported uncut, and Pearls, unset and imported unpierced.	—	—	Free.
49	Precious Stones, unset and imported cut, and Pearls, imported pierced	—	*Ad valorem*	11 per cent.
50	Pulp of Wood, Rags and other paper-making materials	—	—	Free.
51	All other Raw Materials, and produce and articles mainly unmanufactured, not otherwise specified.	—	*Ad valorem*	11 per cent.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED.			
	APPAREL.			
52	Apparel, including drapery, boots and shoes, and military and other uniforms and accoutrements, but excluding uniforms and accoutrements exempted from duty (No. 53) and gold and silver thread (Nos. 90 and 92) and articles made of silk (*see* No. 100).	—	*Ad valorem*	11 per cent.
53	Uniforms and Accoutrements appertaining thereto, imported by a public servant for his personal use.	—	—	Free.
	ARMS, AMMUNITION AND MILITARY STORES.			
54	Subject to the exemptions specified in No. 57, Arms, Ammunition and Military Stores, that is to say,—			
	(1) Firearms other than pistols, including gas and air guns and rifles.	each	—	Rs. A. 15 0 or 20 per cent. *ad valorem* whichever is higher.
	(2) Barrels for the same, whether single or double		—	15 0
	(3) Pistols, including automatic pistols and revolvers	"	—	15 0
	(4) Barrels for the same, whether single or double	"	—	15 0

No.	Names of Articles.	Per.	Tariff Valuation.	Duty
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED.—*contd.*			
	ARMS, AMMUNITION AND MILITARY STORES—*contd.*			
	Subject to the exemptions specified in No. 57, Arms, Ammunition and Military Stores, that is to say,—		Rs. A.	Rs. A.
	(5) Main springs and magazine springs for firearms, including gas guns and rifles.	each	—	5 0 } or 20 per cent. *ad valorem.* whichever is higher
	(6) Gun stocks and breech blocks	"	—	3 0
	(7) Revolver-cylinders, for each cartridge they will carry	"	—	2 0
	(8) Actions (including skeleton and waster), breech bolts and their heads, cocking pieces, and locks for muzzle-loading arms.	"	—	1 0
	(9) Machines for making, loading or closing cartridges for rifled arms.	—	*Ad valorem*	20 per cent.
	(10) Machines for capping cartridges for rifled arms	—	"	20 "
55	Gunpowder for cannons, rifles, guns, pistols and sporting purposes ...	—	"	20 "
56	Subject to the exemptions specified in No. 57 all Articles, other than those specified in entry No. 54, which are Arms or Parts of Arms within the meaning of the Indian Arms Act, 1878 (excluding springs used for air-guns which are dutiable as hardware, under No. 71), all tools used for cleaning or putting together the same, all machines for making, loading, closing or capping cartridges for arms other than rifled arms and all other sorts of ammunition and military stores, and any articles which the Governor-General in Council may, by notification in the *Gazette of India*, declare to be ammunition or military stores for the purposes of this Act.	—	"	20 "

57	The following Arms, Ammunition and Military Stores:— (*a*) Articles falling under the 5th, 6th, 8th, 9th or 10th item of No. 54 when they appertain to a firearm falling under the 1st or 3rd item and are fitted into the same case with such firearm; (*b*) Arms forming part of the regular equipment of a commissioned or gazetted officer in His Majesty's Service entitled to wear diplomatic, military, naval, Royal Air Force or police uniform; (*c*) A revolver and an automatic pistol and ammunition for such revolver and pistol up to a maximum of 100 rounds per revolver or pistol (*i*) when accompanying a commissioned officer of His Majesty's regular forces, or of the Indian Auxiliary Force or the Indian Territorial Force or a gazetted police officer, or (*ii*) certified by the commandant of the corps to which such officer belongs, or, in the case of an officer not attached to any corps, by the officer commanding the station or district in which such officer is serving, or in the case of a police officer, by an Inspector-General or Commissioner of Police, to be imported by the officer for the purpose of his equipment; (*d*) Swords for presentation as army or volunteer prizes; (*e*) Arms, ammunition, and military stores imported with the sanction of the Government of India for the use of any portion of the military forces of a State in India which may be maintained and organised for Imperial Service; (*f*) Morris tubes and patent ammunition imported by officers commanding British and Indian regiments or volunteer corps for the instruction of their men.	—	—	Free.
58	Explosives, namely, blasting gunpowder, blasting gelatine, blasting dynamite, blasting roburite, blasting tonite, and all other sorts, including detonators and blasting fuse.	—	*Ad valorem*	11 per cent.

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*			
	CARRIAGES AND CARTS.		Rs. A.	
59	Carriages and Carts including jinrikshas, bath chairs, perambulators, trucks, wheel-barrows, and all other sorts of conveyances and component parts thereof not otherwise specified, including motor vans if imported with all their parts assembled and also including motor lorries and the following component part of motor lorries, namely:— Chassis, solid tyres. wheels, bodies, axles and gear boxes (*see* No. 60).	—	*Ad valorem*	11 per cent.
60	Motor-cars, motor-cycles, motor-scooters, bicycles, and tricycles and parts and accessories thereof: provided that such parts or accessories as are ordinarily also used for other purposes shall be dutiable at the rate of duty specified for such articles.	—	,,	20 ,,
	CHEMICALS, DRUGS AND MEDICINES.			
61	Anti-Plague Serum	—	—	Free.
62	Copperas, green	—	*Ad valorem*	2½ per cent.
				Rs. A.
63	Opium and its alkaloids, and their derivatives	Seer of 80 tolas	...	24 0
64	Quinine and other alkaloids of cinchona	—	...	Free.
65	Chemicals, Drugs and Medicines, all sorts not otherwise specified—			
	Alkali, Indian (sajji-khar)	cwt.	4 0	11 per cent.
	Alum (lump)	,,	12 0	11 ,,
	Arsenic (China mansil)	,,	60 0	11 ,,
	,, other sorts	—	*Ad valorem*	11 ,,
	Soda ash and crescent alkali	cwt.	5 0	11 ,,
	Soda Bicarbonate	,,	8 0	11 ,,
	Soda, caustic, solid	,,	18 0	11 ,,

	„ „ flake	„	23 0	11	„
	„ „ powdered	„	28 0	11	„
	Soda Magadi	„	4 0	11	„
	Sulphate of copper	„	20 0	11	„
	Sulphur (brimstone), flowers	„	11 8	11	„
	„ „ roll	„	11 8	11	„
	„ „ rough	—	*Ad valorem*	11	„
	All other sorts of chemical products and preparations not otherwise specified.	—	„	11	„
	Aloe-wood	—	„	11	„
	Asafœtida (hing)	cwt.	125 0	11	„
	„ coarse (hingra)	„	50 0	11	„
	Atáry, Persian	—	*Ad valorem*	11	„
	Bánslochan (bamboo camphor)	lb.	0 9	11	„
	Calumba root	cwt.	20 0	11	„
	Camphor, refined, other than powder	lb.	5 8	11	„
	Cassia lignea	cwt.	35 0	11	„
	China root (chobchini) rough	„	15 0	11	„
	„ „ scraped	„	30 0	11	„
	Cubeb	„	165 0	11	„
	Galangal, China	„	16 0	11	„
	Salep	„	350 0	11	„
	Storax, liquid (rose mellos or salaras)	„	70 0	11	„
	All other sorts of drugs, medicines, and narcotics	—	*Ad valorem*	11	„
	CUTLERY, HARDWARE, IMPLEMENTS AND INSTRUMENTS.				
66	The following Agricultural Implements, namely, winnowers, threshers, mowing and reaping machines, elevators, seed-crushers, chaff-cutters, root-cutters, horse and bullock gears, ploughs, cultivators, scarifiers, harrows, clod-crushers, seed-drills, hay-tedders, and rakes; also component parts of these implements, provided that they can be readily fitted into their proper places in the implements for which they are imported, and that they cannot ordinarily be used for purposes unconnected with agriculture.	—	—		Free.

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*		Rs. A.	
	CUTLERY, HARDWARE, IMPLEMENTS AND INSTRUMENTS—*contd.*			
67	Clocks and Watches, and parts thereof	—	*Ad valorem*	20 per cent.
68	Cutlery, excluding electroplated cutlery (*see* No. 70)	—	,,	11 ,,
69	The following Dairy Appliances, namely, cream separators, milk sterilizing or pasteurizing plant, milk aerating and cooling apparatus, churns, butter dryers, and butter workers; also component parts of these appliances provided that they can be readily fitted into their proper places in the appliances for which they are imported, and that they cannot ordinarily be used for other than dairy purposes.	—	—	Free.
70	Electroplated Ware	—	*Ad valorem*	20 per cent.
71	Hardware, Ironmongery and Tools, all sorts, not otherwise specified ...	—	,,	11 ,,
72	Instruments, Apparatus, and Appliances, imported by a passenger as part of his personal baggage and in actual use by him in the exercise of his profession or calling.	—	—	Free.
73	Musical Instruments	—	*Ad valorem*	20 per cent.
74	Telegraphic Instruments and Apparatus, and parts thereof, imported by or under the orders of a railway company.	—	,,	2½ ,,
75	Water-lifts, Sugar-mills, Oil-presses, and parts thereof, when constructed so that they can be worked by manual or animal power.	—	—	Free.
76	All other sorts of Implements, Instruments, Apparatus and Appliances, and parts thereof not otherwise specified.	—	*Ad valorem*	11 per cent.
	DYES AND COLOURS.			
77	Dyeing and Tanning Substances, all sorts, and Paints and Colours and painters' materials, all sorts—			
	Alizarine dye, dry, not exceeding 40 per cent.	lb.	4 8	11 ,,
	,, ,, ,, over 40 per cent. but not exceeding 50 per cent.	,	5 0	11 ,,

	,, ,, ,, over 50 per cent. but not exceeding 60 per cent.	,,	5 8	11	,,
	,, ,, ,, over 60 per cent. but not exceeding 70 per cent.	,,	6 8	11	,,
	,, ,, ,, over 70 per cent. but not exceeding 80 per cent.	,,	7 8	11	,,
	,, ,, ,, over 80 per cent.	,,	8 8	11	,,
	,, ,, moist, not exceeding 10 per cent.	,,	0 10	11	,,
	,, ,, ,, over 10 per cent. and not exceeding 16 per cent.	,,	1 0	11	,,
	,, ,, ,, over 16 per cent. and not exceeding 20 per cent.	,,	1 4	11	,,
	,, ,, ,, exceeding 20 per cent.	,,	2 0	11	,,
	Aniline dye moist	,,	5 0	11	,,
	,, ,, dry	,,	7 8	11	,,
	,, salts	—	*Ad valorem*	11	,,
	Avar bark	cwt.	5 0	11	,,
	Cochineal	lb.	1 1	11	,,
	Gallnuts (myrabolams)	—	*Ad valorem*	11	,,
	,, Persian	cwt.	45 0	11	,,
	Gamboge	lt	2 0	11	,,
	All other sorts of dyeing and tanning materials	—	*Ad valorem*	11	,,
	Lead, red, dry	cwt.	34 0	11	,,
	,, white, dry	,,	36 0	11	,,
	Ochre, other than European, all colours	,,	2 0	11	,,
	Turpentine	Imperial gallon	9 0	11	,,
	Vermilion, Canton	box of 90 bundles	245 0	11	,,
	Zinc, white, dry	—	*Ad valorem*	11	,,
	All other sorts of paints, colours and painters' materials not otherwise specified, including glue and putty.	—	,,	11	,,
	Furniture, Cabinetware and Manufactures of Wood.				
78	Furniture, Cabinetware, and all other manufactures of wood not otherwise specified.	—	*Ad valorem*	11	,,
	Glassware and Earthenware.				
79	Glass and Glassware, lacquered ware, earthenware, China and porcelain; all sorts except glass bangles, beads and false pearls (*see* No. 80).	—	*Ad valorem*	11	,,
80	Glass Bangles and Beads and False Pearls	—	,,	20	,,

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*		Rs. A.	
	HIDES, SKINS AND LEATHER.			
81	Hides and Skins not otherwise specified. Leather and Leather Manufactures, all sorts, not otherwise specified.	—	*Ad valorem*	11 per cent.
	MACHINERY.			
82	Machinery, namely, prime-movers and component parts thereof, including boilers and component parts thereof; also including locomotive and portable engines, steam-rollers, fire-engines, and other machines in which the prime-mover is not separable from the operative parts.	—	*Ad valorem*	2½ „
	Machinery (and component parts thereof), meaning machines or sets of machines to be worked by electric, steam, water, fire or other power not being manual or animal labour or which, before being brought into use, require to be fixed with reference to other moving parts; and including belting of all materials for driving machinery.	—	„	2½ „
	Provided that the term does not include tools and implements to be worked by manual or animal labour, and provided also that only such articles shall be admitted as component parts of machinery as are indispensable for the working of the machinery and are, owing to their shape or to other special quality, not adapted for any other purpose.			
	Note.—This entry includes machinery and component parts thereof made of substances other than metal.			
83	Machinery and component parts thereof, meaning machines or parts of machines to be worked by manual or animal labour.	—	*Ad valorem*	11 „

84	IRON—			
	Angle—			
	Angle and T, Best Yorkshire or Swedish and similar qualities ...	ton	450 0	2½ „
	„ other than Best Yorkshire or Swedish and similar qualities.	„	300 0	2½ „
	„ other than Best Yorkshire or Swedish and similar qualities, if galvanized, tinned, or lead coated.	„	350 0	2½ „
	All other sorts	—	*Ad valorem*	2½ „
	Bar, Rod and Channel, including Channel for Carriages—			
	Bar, Best Yorkshire and similar qualities	ton	450 0	2½ „
	„ Swedish and similar qualities	„	400 0	2½ „
	„ „ „ „ nail-rod, round-rod, and square under ½ inch in diameter.	„	420 0	2½ „
	„ Swedish and charcoal, if galvanized, tinned, or lead coated	—	*Ad valorem*	2½ „
	„ other kinds	ton	300 0	2½ „
	„ „ nail-rod, round-rod and square under ½ inch in diameter.	„	320 0	2½ „
	„ „ if galvanized, tinned, or lead coated ...	„	350 0	2½ „
	Channel, including channel for carriages	„	340 0	2½ „
	All other sorts	—	*Ad valorem*	2½ „
	Pig	—	„	2½ „
	Rice Bowls	—	„	2½ „
85	IRON OR STEEL—			
	Anchors and Cables	—	*Ad valorem*	2½ „
	Beams, joists, pillars, girders, screw-piles, bridge work and other such descriptions of iron or steel imported exclusively for building purposes; including also ridging, guttering and continuous roofing.	—	„	2½ „
	Bolts and nuts, including hook bolts and nuts for roofing	—	„	2½ „
	Hoops and Strips—			
	Hoops, Best Yorkshire or Swedish and similar qualities ...	ton	475 0	2½ „
	„ other than Best Yorkshire or Swedish, if galvanised, tinned, or lead coated.	„	425 0	2½ „
	„ other kinds	„	350 0	2½ „
	Strips, Best Yorkshire or Swedish and similar qualities ...	„	475 0	2½ „

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*			
	METALS, IRON AND STEEL—*contd.*		Rs. A.	
	IRON OR STEEL—*contd.*			
	Strips, if galvanised, tinned, lead coated, aluminium coated, chequered or planished.	ton	425 0	2½ per cent.
	,, other kinds	,,	350 0	2½ ,,
	Nails, Rivets and Washers, all sorts—			
	Iron or steel nails, rose, deck, wire and flat-headed	cwt.	28 0	2½ ,,
	,, ,, other kinds, including galvanised, tinned or lead coated.	,,	50 0	2½ ,,
	Washers, iron or steel, plain or galvanised (excluding dome-shaped, spring or locking washers).	,,	30 0	2½ ,,
	Washers, iron or steel, tinned or lead coated and dome-shaped, spring or locking washers.	—	*Ad valorem*	2½ ,,
	Rivets, iron or steel, all sorts	cwt.	30 0	2½ ,,
	Pipes and Tubes, and fittings therefor, such as bends, boots, elbows, tees, sockets, flanges and the like.	—	*Ad valorem*	2½ ,,
	Rails, Chairs, sleepers, bearing and fish plates, spikes (commonly known as dog spikes), switches, and crossings, other than those described in No. 96, also lever boxes, clips, and tie-bars.	—	*Ad valorem*	2½ ,,
	Sheets and Plates, all sorts, excluding discs and circles which are dutiable under No. 87—			
	Sheets and plates, Best Yorkshire and similar qualities	ton	650 0	2½ ,,
	,, ,, Swedish and charcoal	,,	550 0	2½ ,,
	Plates, other kinds, above ⅛ inch thick	,,	325 0	2½ ,,
	Sheets, other kinds, up to ⅛ inch thick	,,	350 0	2½ ,,
	Sheet and plate cuttings	,,	300 0	2½ ,,
	Sheets, Swedish and charcoal, if galvanised, tinned, or lead coated	,,	675 0	2½ ,,
	Sheets (other than corrugated) other kinds if galvanised, tinned, lead coated, aluminium coated or planished; also chequered plates.	,,	425 0	2½ ,,

	Tinplates	„	600 0	2½	„
	Sheets, corrugated, galvanised or black	„	400 0	2½	„
	Wire, including piano-wire, fencing wire and wire rope, but excluding wire-netting (which is dutiable under No. 87).	—	*Ad valorem*	2½	„
86	STEEL—				
	Angle—				
	Angle and T, if galvanised, tinned or lead coated	ton	350 0	2½	„
	„ „ all other sorts	„	300 0	2½	„
	Bar, Rod and Channel, including channel for carriages—				
	Bar, Swedish and similar qualities	„	400 0	2½	„
	„ nail-rod, round-rod, and square, other than Swedish or similar qualities, under ½ inch in diameter.	„	320 0	2½	„
	„ galvanised, tinned, lead coated, planished or polished ...	„	350 0	2½	„
	„ common merchant	„	300 0	2½	„
	„ crucible, cast steel (tool steel) including (*a*) High speed. (*b*) Carbon steel.	—	*Ad valorem*	2½	„
	„ high tensile steel	—	*Ad valorem*	2½	„
	Channel, including channel for carriages	ton	340 0	2½	„
	Spring, blistered and tub steel (including bars)	—	*Ad valorem*	2½	„
	Ingots, Blooms, Billets and Slabs	—	„	2½	„
87	All sorts of Iron and Steel and manufactures thereof, not otherwise specified—				
	Iron or steel cans or drums, when imported containing petroleum, which is separately assessed to duty under Nos. 33 and 34, namely:—				
	(1) Iron or steel cans, tinned	can	0 6	11	„
	(2) Iron or steel cans or drums, not tinned, of two gallons capacity—				
	(*a*) with faucet caps	can or drum	1 0	11	„
	(*b*) ordinary	„	0 4	11	„
	(3) Iron or steel drums of four gallons capacity—				
	(*a*) with faucet caps	drum	2 4	11	„
	(*b*) ordinary	„	2 0	11	„

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*			
	METALS, IRON AND STEEL—*contd.*		Rs. A.	
	All sorts of Iron and Steel, &c.—*contd.*			
	Iron or steel cans or drums when imported not containing petroleum.	—	*Ad valorem*	11 per cent.
	Iron or steel, all other sorts, including discs or circles and wire-netting.	—	,,	11 ,,
	METALS, OTHER THAN IRON AND STEEL.			
88	Current, Nickel, Bronze, and Copper Coin of the Government of India	—	—	Free.
89	Gold and Silver Bullion and Coin	—	—	Free.
90	Gold Plate, Gold Thread and Wire and Gold Manufactures, all sorts ...	—	*Ad valorem*	20 per cent.
91	Lead, sheets, for tea-chests	—	,,	2½ ,,
92	Silver Plate, Silver Thread and Wire, and Silver Manufactures, all sorts	—	,,	20 ,,
93	All sorts of Metals other than Iron and Steel, and manufactures thereof, not otherwise specified—			
	Brass, patent or yellow metal, sheets and sheathing, weighing 1 lb. or above per square foot, and braziers, and plates.	cwt.	80 0	11 ,,
	,, patent or yellow metal (including gun metal) ingots	,,	37 0	11 ,,
	,, patent or yellow metal (old)	,,	35 0	11 ,,
	,, sheets, flat or in rolls, and sheathing, weighing less than 1 lb. per square foot.	—	*Ad valorem*	11 ,,
	,, wire	—	,,	11 ,,
	,, all other sorts	—	,,	11 ,,
	Copper, bolt and bar, rolled	—	,,	11 ,,
	,, braziers, sheets, plates and sheathing	cwt.	80 0	11 ,,

	,, sheets, planished	—	*Ad valorem*	11	,,
	,, nails and composition nails	—		11	,,
	,, old	cwt.	45 0	11	,,
	,, pigs, tiles, ingots, cakes, bricks, and slabs	,,	55 0	11	,,
	,, China, white, copperware	lb.	4 8	11	,,
	,, foil or dankpana, white, 10 to 11 in. × 4 to 5 in.	hundred leaves	6 8	11	,,
	,, foil or dankpana, coloured, 10 to 11 in. × 4 to 5 in. ...	,,	7 8	11	,,
	,, wire, including phosphor-bronze	—	*Ad valorem*	11	,,
	,, all other sorts, unmanufactured and manufactured, except current coin of the Government of India, which is free.	—	,,	11	,,
	German silver	—		11	,,
	Lametta	—	,,	11	,,
	Lead, all sorts (except sheets for tea chests)	—	,,	11	,,
	Quicksilver	lb.	,, 2 6	11	,,
	Shot, bird	cwt.	43 0	11	,,
	Tin, block	,,	165 0	11	,,
	,, foil, and other sorts	—	*Ad valorem*	11	,,
	Zinc or spelter, tiles, slabs or plates, hard or soft	cwt.	30 0	11	,,
	,, ,, all other sorts, including boiler tiles	—	*Ad valorem*	11	,,
	All other sorts of metals, and manufactures thereof	—	,,	11	,,
	Paper, Pasteboard and Stationery.				
94	Trade Catalogues and Advertising Circulars imported by packet, book, or parcel post.	—	—	Free.	
95	Paper and articles made of Paper and Papier Maché, Pasteboard, Millboard, and Cardboard all sorts, and Stationery, including ruled or printed forms and account and manuscript books, drawing and copy books, labels, advertising circulars, sheet or card almanacs and calendars, Christmas, Easter and other cards, including cards in booklet form; including also wastepaper and old newspapers for packing; but excluding trade catalogues and advertising circulars imported by packet, book, or parcel post. (*See* No. 94.)	—	*Ad valorem*	11 per cent.	

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*			
	RAILWAY PLANT AND ROLLING STOCK.			
96	Railway Material for permanent-way and rolling-stock, namely, cylinders, girders, and other material for bridges, rails, sleepers, bearing and fish-plates, fish-bolts, chairs, spikes, crossings, sleeper fastenings, switches, interlocking apparatus, brake gear, couplings and springs, signals, turn-tables, weigh-bridges, engines, tenders, carriages, wagons, traversers, trollies, trucks, and component parts thereof; also the following articles when imported by or under the orders of a railway company, namely, cranes, water cranes, water tanks and standards, wire and other materials for fencing. Provided that for the purpose of this entry "railway" means a line of railway subject to the provisions of the Indian Railways Act, 1890, and includes a railway constructed in a State in India and also such tramways as the Governor-General in Council may, by notification in the *Gazette of India*, specifically include therein. Provided also that only such articles shall be admitted as component parts of railway material as are indispensable for the working of railways and are, owing to their shape or other special quality, not adapted for any other purpose.	—	*Ad valorem*	2½ per cent.
	YARNS AND TEXTILE FABRICS.			
97	Cotton Twist and Yarn, and Cotton Sewing or Darning Thread	—	—	Free.
98	Cotton piece-goods, thread other than sewing or darning thread, and all other manufactured cotton goods not otherwise specified.	—	*Ad valorem*	11 per cent.
99	Second-hand or used Gunny Bags made of jute	—	—	Free.

100	Yarns and Textile Fabrics, that is to say:—				
	Flax, twist and yarn and manufactures of flax	—	*Ad valorem*	11	per cent.
	Haberdashery and Millinery excluding articles made of silk ...	—	„	11	„
	Hemp manufactures	—	„	11	„
	Hosiery excluding articles made of silk	—	„	11	„
	Jute twist and yarn and jute manufactures, excluding second-hand or used gunny bags (*see* No. 99).	—	„	11	„
	Silk piece-goods, *Japan and Shanghai* (white and coloured)—				
	Japan—		Rs. A.		
	Plain paj, all kinds, including striped, printed, embossed and pine-apples, all widths.	lb.	26 0	20	„
	Plain and flowered satins, all kinds, including striped, printed and embossed (other than cotton and silk mixed), all widths.	„	32 0	20	„
	Plain and flowered twill, thama and junken, all widths	„	28 0	20	„
	Flowered paj, thama and junken, all widths	„	26 0	20	„
	Fancies, all kinds, plain, flowered, printed and woven, including georgettes, kobe-crepe, crepe-de-chine (chirimin), ninons and gauze, all widths.	„	37 0	20	„
	Kohaku plain and flowered, also silk-satin flowered, all kinds, including thama and junken, but excluding Jarina, all widths.	„	32 0	20	„
	Jarina (gold embroidered)	„	39 0	20	„
	Embroideries, all kinds, including apparel, all widths	„	52 0	20	„
	Apparel other than embroidered including shawls, mufflers, handkerchiefs and hosiery (other than cotton and silk mixed).	„	48 0	20	„
	Apparel, Dupetas (including Burmese scarves), all kinds	„	29 0	20	„
	Cotton and silk mixed satins, all kinds and all widths	„	11 0	20	„
	Cotton and silk mixed hosiery, all kinds	„	30 0	20	„
	Cotton and silk mixed Boseki, all kinds and all widths	„	9 0	20	„
	Shanghai—				
	Honans, including striped, all kinds and all widths	„	12 0	20	„
	Shantungs, including striped, all kinds and all widths	„	5 8	20	„
	Corded, including striped, all kinds (except woochow) and all widths.	„	8 0	20	„
	White cord (woochow) including striped, all kinds and all widths	„	18 0	20	„
	Crepe, gauze, paj, plain and flowered, including striped, all kinds and all widths.	„	21 0	20	„
	Fancies, all kinds and all widths	„	29 0	20	„

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*			
	YARNS AND TEXTILE FABRICS—*contd.*			
	Silk piece-goods, other than Japan and Shanghai, and other manufactures of silk.	—	*Ad valorem*	20 per cent.
	Silk yarn, noils and warps, and silk thread	—	„	11 „
	Woollen yarn, knitting wool and other manufactures of wool including felt.	—	„	11 „
	All other sorts of yarns and textile fabrics, not otherwise specified ...	—	„	11 „
	MISCELLANEOUS.			
101	Aeroplanes, aeroplane parts, aeroplane engines and aeroplane engine parts.	—	„	2½ „
102	Art, the following works of:—(1) statuary and pictures intended to be put up for the public benefit in a public place, and (2) memorials of a public character intended to be put up in a public place, including the materials used, or to be used in their construction, whether worked or not.	—	—	Free.
103	Art, works of, excluding those specified in No. 102	—	*Ad valorem*	11 per cent.
104	Books, printed, including covers for printed books, maps, charts, and plans, proofs, music and manuscripts.	—	—	Free.
105	Brushes and Brooms	—	*Ad valorem*	11 per cent.
106	Building and Engineering materials, including asphalt, bricks, cement, chalk and lime, clay, pipes of earthenware, tiles and all other sorts of building and engineering materials not otherwise specified.	—	„	11 „
107	Candles	—	„	11 „

108	Cinematograph Films—			
	Positive Films	Foot	0 4	20 „
	Other Films	—	*Ad valorem*	20 „
109	Cordage and rope and twine of vegetable fibre	—	„	11 „
110	Fireworks	—	„	20 „
111	Furniture, tackle and apparel, not otherwise described, for steam, sailing, rowing and other vessels.	—	„	11 „
112	Ivory, manufactured	—	„	20 „
113	Jewellery and Jewels	—	„	20 „
114	Matches:—			Rs. A.
	(1) In boxes containing not more than 100 matches	Gross of boxes	—	0 12
	(2) In boxes containing more than 100 matches	For every 100 matches or fraction thereof in each box, per gross of boxes.	—	0 12
115	Mats and Matting	—	*Ad valorem*	11 per cent.
116	Oilcakes	—	„	11 „
117	Oilcloth and Floor Cloth	—	„	11 „
118	Packing—Engine and Boiler—all sorts, excluding packing forming a component part of any article included in No. 82 and No. 96.	—	„	11 „
119	Perfumery, excluding perfumed spirits (*see* No. 10)—			
	Gowla, husked and unhusked	cwt.	85 0	11 „
	Kapurkachri (zedoary)	„	25 0	11 „
	Patch leaves (patchouli)	„	25 0	11 „
	Rose-flowers, dried	„	30 0	11 „
	Rose-water	Imperial gallon.	5 0	11 „
120	Pitch, Tar and Dammer	—	*Ad valorem*	11 „
121	Perfumery, excluding perfumed spirits (*see* No. 10)— cycles, motor scooters, bicycles and tricycles.	—	„	20 „
122	Polishes and Compositions	—	„	11 „

No.	Names of Articles.	Per	Tariff Valuation.	Duty.
	III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—*contd.*			
	MISCELLANEOUS—*contd.*			
123	Printing and Lithographing Material, namely, presses, type, ink, aluminium lithographic plates, brass rules, composing sticks, chases, imposing tables, and lithographic stones, stereoblocks, roller moulds, roller frames and stocks, roller composition, standing screw and hot presses, perforating machines, gold blocking presses, galley presses, proof presses, army presses, copper plate printing presses, ruling machines, ruling pen making machines, lead and rule cutters, type casting machines, type setting and casting machines, rule bending machines, rule mitreing machines, bronzing machines, leads, wooden and metal quoins, shooting sticks and galleys, stereotyping apparatus, metal furniture, paper folding machines, and paging and numbering machines, but excluding paper (*see* No. 95).	—	*Ad valorem*	2½ per cent.
124	Prints, Engravings and Pictures, including photographs and picture-cards.	—	,,	20 ,,
125	Racks for the withering of tea leaf	—	,,	2½ ,,
126	Rubber tyres and other manufactures of rubber, not otherwise specified (*see* No. 121).	—	,,	11 ,,
127	Ships and other vessels for inland and harbour navigation, including steamers, launches, boats and barges, imported entire or in sections.	—	,,	2½ ,,
128	Smokers' requisities, excluding tobacco (*see* Nos. 25 to 27) and matches (No. 114).	—	,,	20 ,,
129	Soap	—	,,	11 ,,
130	Starch and farina	—	,,	11 ,,
131	Stone and marble, and articles made of stone and marble	—	,,	11 ,,
132	Tea-chests of metal or wood, whether imported entire or in sections, provided that the Collector of Customs is satisfied that they are imported for the purpose of the packing of tea for transport in bulk.	—	,,	2½ ,,

133	Toilet requisites, not otherwise specified	—	„	11 „
134	Toys, games, playing cards and requisites for games and sports	—	„	20 „
135	Umbrellas, including parasols and sunshades, and fittings therefor ...	—	„	11 „
136	All other articles wholly or mainly manufactured, not otherwise specified	—	„	11 „
	IV.—MISCELLANEOUS AND UNCLASSIFIED.			
137	Animals, living, all sorts	—	—	Free.
138	Coral	—	*Ad valorem*	11 per cent.
139	Specimens illustrative of natural science, and medals and antique coins	—	—	Free.
140	All other articles not otherwise specified, including articles imported by post.	—	*Ad valorem*	11 per cent.

SCHEDULE III.—EXPORT TARIFF.

No.	Names of Articles.	Per	Tariff Valuation.	Rate of duty.
	JUTE OTHER THAN BIMLIPATAM JUTE.		Rs. A. P.	Rs. A.
1	Raw Jute—			
	(1) Cuttings	Bale of 400 lbs.	—	1 4
	(2) All other descriptions	„ 400 „	—	4 8
2	Jute manufactures when not in actual use as coverings, receptacles or bindings for other goods—			
	(1) Sacking (cloth, bags, twist, yarn, rope and twine)	Ton of 2,240 lbs.	—	20 0
	(2) Hessians and all other descriptions of jute manufactures not otherwise specified.	„ 2,240 „	—	32 0
	RICE.			
3	Rice, husked or unhusked, including rice flour, but excluding rice bran and rice dust, which are free.	Indian maund of 82⅔ lbs. avoirdupois weight.	—	0 3
	TEA.			
4	Tea	100 lbs.	—	1 8
5	**RAW HIDES AND SKINS IF EXPORTED FROM BURMA.**			
	(1) Arsenicated and air-dried hides—			
	(*a*) Cows (including calf skins)	lb.	0 5 0*	15 per cent.
	(*b*) Buffaloes (including calf skins)	„	0 2 0*	15 „
	(2) Dry salted hides—			
	(*a*) Cows (including calf skins)	„	0 2 0*	15 „
	(*b*) Buffaloes (including calf skins)	„	0 1 0*	15 „

* With effect from 16th April, 1921.

	(3) Wet salted hides—				
	(*a*) Cows (including calf skins)	„	0 3 0*	15	„
	(*b*) Buffaloes (including calf skins)	„	0 1 0*	15	„
	(4) Goat and kid skins	Piece	1 0 0	15	„
	(5) Sheep skins	„	0 8 0	15	„
6	RAW HIDES AND SKINS IF EXPORTED FROM ANY PLACE IN BRITISH INDIA OTHER THAN BURMA.				
	(1) Arsenicated and air dried hides—				
	(*a*) Cows (including calf skins) { Framed	lb.	0 6 0*	15 per cent.	
	{ Unframed	„	0 2 6*	15	„
	(*b*) Buffaloes (including calf skins) { Framed	„	0 2 6*	15	„
	{ Unframed	„	0 1 6*	15	„
	(2) Dry salted hides—				
	(*a*) Cows (including calf skins)	„	0 2 0*	15	„
	(*b*) Buffaloes (including calf skins)	„	0 1 0*	15	„
	(3) Wet salted hides—				
	(*a*) Cows (including calf skins)	„	0 3 0*	15	„
	(*b*) Buffaloes (including calf skins)	„	0 1 0*	15	„
	(4) Goat and kid skins	Piece	1 0 0	15	„
	(5) Sheep skins	„	0 8 0	15	„

N.B.—Provided that, subject to such conditions as the Governor-General in Council may by notification in the *Gazette of India* prescribe, a rebate shall be granted to the exporter of two-thirds of the duty levied on hides or skins exported to any part of His Majesty's dominions or of the territories of any Indian Prince or Chief under the suzerainty of His Majesty or of any territories under the protection of His Majesty or in respect of which a mandate of the League of Nations is exercised by the Government of any part of His Majesty's dominions.

* With effect from 16th April, 1921.

APPENDIX XXIX. (*See* page 196.)

Summary of the Report of the Indian Railway Committee.

The Committee show by extensive quotations from the evidence that the existing Indian railway system is entirely inadequate to meet the needs of the country, and that there is urgent need of drastic measures of reform and reconstruction. They consider that the defects are due primarily to the failure of the Government to provide adequate funds both for capital works and for renewals, and are the inevitable results of a paralysing system, which has not been developed to meet the requirements of a great commercial enterprise. Stress is laid on the fact that railway investment is directly profitable, and also indirectly through the benefit to the country.

The subordinate position of the railway administration is not in accord with its financial importance. The Member of Council for Commerce, with his present multifarious duties, cannot adequately attend to the railways, with the result that the Railway Board is in the position of a stepchild. It is overloaded with routine and trammelled by unnecessary restrictions, and does not exercise the necessary powers in matters of policy. As at present organised, it cannot possess the necessary local knowledge and does not enjoy the public confidence. Engineering inspection is overdone. Greater provision for inspection of traffic is especially needed. Accounts and statistics are in need of radical reform. Railway relations with the public are unsatisfactory, and greater control of rates and fares is necessary. The provision in the Railways Act for Commissions is unsuitable. Delays in settling claims are serious. Bribery in connection with wagon allotments has grown into a system of organised blackmail. Third-class passengers' grievances require particular attention.

The Committee recommend the addition to the Governor-General's Council of a Member for Communications, to be responsible for Railways, Ports, Inland Navigation, Road Transport so far as it is a central subject, and Posts and Telegraphs. The Member must be an experienced administrator, but not necessarily a technical expert. The Railway Board to be replaced by a Railway Commission, with a technical railway man as Chief Commissioner, who would be responsible, under the Member of Council, for arriving at decisions on technical questions, and for advising the Member on matters of railway policy, and would have the status of a Secretary to Government. He would be assisted by four Commissioners, one Financial Commissioner as Second in Command at headquarters, and in charge of Finance, Statistics, Secretariat and Establishment, and three Railway Commissioners in charge respectively of Western, Eastern and Southern territorial divisions. The Divisional Commissioners to be normally engaged at headquarters, but to devote a substantial portion of their time to personal visits to their divisions. The technical staff at headquarters to be strengthened, especially on the traffic side, and to comprise six Directors in charge respectively of Accounts, Civil Engineering, Mechanical Engineering, Traffic (operating), Traffic (commercial), and Ports, Inland Navigation and Road Transport.

The Finance Department to cease to control the internal finance of railways. The Railway Budget to be separate, and to be presented to the Legislative Assembly by the Member in charge of Communications. The Railway Department to be responsible for earning and expending its own income, and, after providing such net revenue as may be required to meet the interest on the railway debt, to regulate the disposal of the balance, being left free to devote it to new capital purposes, to reserves, or to the reduction of rates or the improvement of services. Subject to independent audit by the Government of India, the Railway Department to employ its own Accounting Staff. The present forms of Accounts and Statistics to be remodelled with expert assistance. The

number of Engineering Inspectors to be reduced to three, and additional Inspectors of Traffic to be appointed. The reconstituted Railway Department to be relieved from control by the India Office and the Government of India except on large questions of finance and general policy. It should delegate increased powers of day-to-day management to the Railway Administrations, but, on the other hand, should be given greater powers in matters such as the initiation and enforcement of reforms and some control over the appointment of the principal officers.

To give the Indian public a voice in railway management, the Committee recommend the establishment, as soon as possible, of one Central and a number of Local Advisory Councils, the former, under the chairmanship of the Member for Communications, to consist of not more than 25 members, three or four representing the Departments of Government concerned, eight or nine to be nominated by trade and industrial associations, and a similar number, to represent agricultural interests and the travelling public, to be nominated by the Provincial Legislative Councils. The Local Advisory Councils to be about half the size of the Central Advisory Council and similar in constitution, meeting either at the headquarters of each railway with the Agent as chairman, or at each important railway centre, the Agents of all the railways concerned being members and one of them chairman.

A Rates Tribunal, with an experienced lawyer as chairman, and one railway and one commercial member to be established with jurisdiction over all questions of reasonableness of rates and facilities. The Tribunal to investigate conditions attached to owners' and railway risk notes and to frame standard forms. In certain circumstances an appeal to lie against the decision of the Rates Tribunal to the Governor-General in Council. Delays in settling claims to be reduced.

The utmost possible efforts to be made to stamp out the serious and widespread abuses connected with the allocation of wagons; also to minimise the inconveniences of lower-class passengers by the loan of stock from one railway to another when required, by enforcing cleanliness and the provision of drinking water, and by the extended employment of Passenger Superintendents. The Committee consider a general and substantial increase in rates and fares overdue, and recommend such an increase, the present surtax on railway traffic, which is bad in principle, being withdrawn. Greater facilities are necessary for training Indians for superior posts and the process of their employment to be accelerated.

Branch lines to be as far as possible constructed and worked by main lines, and separate Branch Line Companies to be encouraged only in cases where the State is unable or unwilling to provide funds. When financial conditions permit of railway development, Indian States to be called into Council and invited to take part in working out a common scheme of development. The Department of Communications to enquire into the alleged unfair railway competition with inland waterways.

Investigation of the gauge question by an expert Commission is recommended. Sir Henry Burt dissents from this.

The Committee are unanimous in advising that the system of management by guaranteed companies of English domicile should not be continued after the termination of their present contracts, and that management by a combination of English and Indian domiciled companies is impracticable. But they are divided as to the relative merits of management by the State and by India domiciled companies.

The Chairman, Mr. Sastri, Mr. Hiley, Mr. Purshotamdas and Mr. Tuke are in favour of direct State management, provided that the Committee's recommendations for financial and administrative reforms are substantially adopted. They are opposed to Indian domiciled companies, mainly on the broad ground that, as a matter of practical politics, companies substantially independent cannot be formed in India to work the State-owned lines, and that, without such independence, the advantages claimed for private enterprise are lost. They recommend accordingly that, as

and when the English guaranteed companies' contracts fall in, the undertakings should be managed directly by the State. All future capital to be raised directly by the Central Government. Funds required to put the existing railways into proper shape should be raised, even at to-day's prices, as fast as they can be economically spent. The immediate raising of capital for extensions is not recommended. Government borrowing to be by ordinary sterling loans in England and rupee loans earmarked for railway purposes in India. A systematic organisation should be established to familiarise Indians with the idea of subscribing to Government loans, and specially to interest the masses of people not hitherto accustomed to investment.

Sir Henry Burt, Sir Rajendra Nath Mookerjee, Sir Arthur Anderson, Sir George Godfrey and Sir H. Ledgard are against the Government being committed to a policy of State management only, and recommend the continuance of the system of State and company management side by side, with Indian companies in place of English companies. They accordingly propose a scheme for creating Indian domiciled companies to manage the East Indian Railway and possibly the Great Indian Peninsula Railway, other lines to be considered on their merits later when their contracts become terminable. They agree that much capital must be raised directly by the Central Government, but urge also the fullest use of Indian domiciled companies to provide funds from independent sources. No channel through which money can be obtained to be neglected; for instance, further debenture loans through existing companies might be negotiated. They agree that money should be raised as fast as it can be economically spent, but do not wish new developments arrested, and consider that private enterprise should be enlisted to provide capital for new lines. Government borrowings, both in England and India, should be advertised as for railway purposes. They recommend enlisting the assistance of all banks when money is required, and that independent offers of loans on special conditions should be considered.

The Committee unanimously endorse the recommendations of the Mackay Committee that in periods of easy money funds should be raised in excess of immediate requirements.

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DEPARTMENT OF OVERSEAS TRADE.

REPORT

ON THE

CONDITIONS AND PROSPECTS OF BRITISH TRADE

IN

INDIA,

During the Fiscal Year April 1st, 1921, to March 31st, 1922, Revised to September, 1922,

BY

Mr. THOMAS M. AINSCOUGH, O.B.E., M.COM., F.R.G.S.,
H.M. Senior Trade Commissioner in India and Ceylon.

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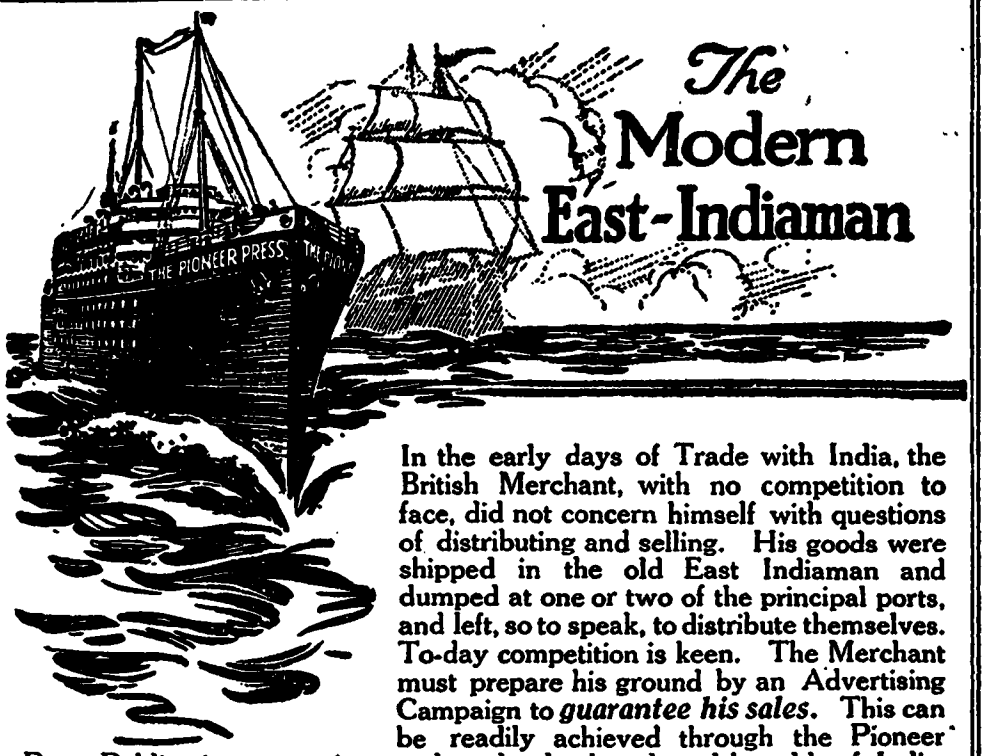

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DEPARTMENT OF OVERSEAS TRADE.

REPORT

ON THE

CONDITIONS AND PROSPECTS OF BRITISH TRADE

IN

INDIA,

During the Fiscal Year April 1st, 1921, to March 31st, 1922, Revised to September, 1922,

BY

Mr. THOMAS M. AINSCOUGH, O.B.E., M.COM., F.R.G.S.,
H.M. Senior Trade Commissioner in India and Ceylon.

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1922

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DEPARTMENT OF OVERSEAS TRADE.

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2. The Commercial Diplomatic Service attached to the British Diplomatic Missions in foreign countries.
3. The British Consular Service in foreign countries.

1. At the present time there are 11 Trade Commissioners' offices established in various parts of the Empire overseas, viz.: three in Canada, at Montreal, Toronto and Winnipeg, respectively; two in South Africa, at Johannesburg and Cape Town; two in Australia, at Melbourne and Sydney; one in India (to cover Ceylon), at Calcutta; and one each in New Zealand, at Wellington; in British East Africa, at Nairobi; and in the British West Indies, at Trinidad.

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The Department is represented in India by Mr. T. M. Ainscough, O.B.E., H.M. Senior Trade Commissioner in India and Ceylon, Calcutta.

2. The Commercial Diplomatic Service consists of between thirty and forty posts in all, and the officers of the Service are stationed in all the more important foreign markets of the world. The members of the Commercial Diplomatic Service are styled "Commercial Counsellors" in the highest grade and "Commercial Secretaries" in the three lower grades. They are members of the staff of the British Embassy or Legation in which they serve.

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NOTE.

It should be understood that the views expressed in annual reports are the views of the officers themselves, and are not necessarily in all respects the views of the Department.

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COVERING DESPATCH.

To the RIGHT HONOURABLE STANLEY BALDWIN, M.P.,
President of the Board of Trade.

Office of H.M. Trade Commissioner,
6, Royal Exchange Place,
Calcutta.
20*th July*, 1922.

SIR,

I HAVE the honour to forward for your information a report on the conditions and prospects of British trade in India during the Indian fiscal year 1921-22.

The period under review has been one of such unprecedented depression and the reasons underlying the slump were dealt with at such length in my last review that it has not been considered desirable to treat the subject in such an exhaustive manner as has been the practice in former years. My aim in compiling the present report has been to touch briefly on the outstanding events of the year, to add such comments as are necessary to bring the last report up-to-date and generally to take stock of the present position.

Once again I have to acknowledge my indebtedness to the Officials of the Commerce and Industries Department of the Government of India for their unfailing courtesy and assistance which has so materially lightened my task during a very difficult year. Special thanks are due to the Director-General of Commercial Intelligence, India, the Director of Statistics, the various Directors of Industry and the Collectors of Customs for valuable information which has always been willingly furnished.

I have the honour to be,
Sir,
Your most obedient servant,
THOMAS M. AINSCOUGH,
H.M. Senior Trade Commissioner in India.

REPORT

ON THE

CONDITIONS AND PROSPECTS OF BRITISH TRADE IN INDIA.

CHAPTER I.

GENERAL REVIEW OF THE PERIOD.

The year 1921 and the early part of 1922 will long be remembered as one of the most depressed and difficult periods in the whole history of British trade relations with India. In the last annual review, the main factors were traced in some detail, some of them world-wide and some peculiar to India, which contributed to bring about a complete deadlock in large sections of the import trade. At that time, however, it was not possible to foresee that the trade depression would be so prolonged and that the recovery would be so slow. A series of adverse influences, both economic and political, prevented that improvement which might have been expected. In the first place, the poor crops due to the failure of the monsoon in 1920 resulted in high food prices and the continuance of the embargo on the exports of wheat and rice. The depression in Russia and Central Europe deprived India of valuable markets for jute, tea, oilseeds, hides and other products. Exports to Germany began to revive during the summer of 1921, but the disastrous fall of the mark in October brought about a collapse in this trade. The American market was also unable to absorb its usual proportion of Indian produce. One result of these restrictive influences on Indian exports was an adverse balance of trade which rendered a high rate of exchange out of the question. Exchange remained about 1*s.* 4*d.*, and although this helped the tea industry to recover, it delayed that recovery in the import trade which might have been anticipated. The political activities of the leaders of the non-co-operation movement, and particularly the boycott of machine-made cloth inaugurated by Mr. Gandhi, tended to retard any improvement in the piece goods trade. The valuable business in iron, steel and other metals was seriously affected by the large stocks of high-priced goods, continuously falling prices at Home, a limited demand from railways and Government Departments as a result of the financial stringency, and the general depression in local industries. Large quantities of surplus Government stores of metals, hardware and textiles came on to the market during the year and had the effect of depressing local prices. Wherever one turns, one finds the same reasons for the depression, viz., a carry-over of large stocks purchased at the top of the market and at

high rates of exchange; general lack of demand owing to the stagnation of trade and industry and the tightness of money; a feeling of political insecurity due to the activities of the non-co-operation party, and a reduced purchasing power on the part of the people as a result of high food prices and a depressed export trade. The only two important items of import which showed expansion during the year were machinery and railway plant.

Present Outlook.—Fortunately, there are many indications that we have passed the low-water mark of the depression in the import trade. During the months of April and May, 1922, the huge stocks of uncleared piece goods, most of them on account of defaulting dealers, began to move and even in Bombay, Delhi and Amritsar, where, last year, it was almost impossible to effect any sales, cargo has been cleared in fair quantities, though in many cases at prices which show losses to shippers of as much as 40 to 50 per cent. The deadweight of repudiated and overdue drafts, which, early in 1921, is estimated to have reached a total of £30,000,000 is being steadily reduced and the most hopeful feature—after a period of twelve months of utter stagnation—is that goods are at last moving into consumption.

The result of the monsoon, as far as can be ascertained from the most recent reports, may now be described as, on the whole, distinctly good, as 20 out of the 33 districts into which India is divided for rainfall purposes have shown a normal return. It is therefore a fair proposition to hope that with such a result, following upon favourable summer and winter rains last year, buying on a more normal scale will take place and it may well be expected that the old stocks of high priced goods at present in the country will be cleared during the cold weather.

Following upon the arrests of many of the leaders of the extremist party, there has been a much easier political feeling throughout the country during the past few months and the conditions are still generally satisfactory (in September). Indian traders seem to show much more confidence and hope than they evinced last year. Moreover the boycott movement is steadily losing ground, and although it is being artificially fostered by the expenditure of political funds, there is ample evidence to show that the great bulk of Indian traders have very little belief in its ultimate success, and are only too ready to leave politics alone and get on with their business if only the prospects for the lucrative employment of their brains and capital improve.

I cannot do better than quote the words of the Chairman of one of the leading Exchange Banks* at the annual meeting in April, 1922, when he said :—

" I am disposed to take the view that, provided the Government of India act consistently with firmness and justice—as I believe they will—there is

* Sir Montague C. Turner at the meeting of Shareholders of the Chartered Bank of India, Australia and China, held in London on April 7th, 1922.

no reason to view the situation with undue apprehension . . . . . I look forward with confidence to the time when we can say that the people of India are showing that spirit of loyalty, comradeship and good will which should exist between all members of the British Empire. But to effect this we must have consistency in policy and firmness in administration. I do not deny that there are troubles at some points, serious troubles, in India, but they are partly agrarian, and can be dealt with by a just and firm Government.

"India has had a very favourable south-west monsoon, good winter rains in the United Provinces and the Punjab, and, granted a return to normal peaceful conditions, with a good south-west monsoon this year, we may look forward to greatly improved trade conditions in the autumn."

Damage to India's Credit by the Action of Unprincipled Traders.—In my last report (p. 3) I referred to the deadlock which had arisen in the import trade, particularly in centres such as Bombay, Delhi and Amritsar, owing to the wholesale repudiation of liabilities and dishonouring of drafts by Indian importers and dealers, and I then predicted that while it was possible that we should see a number of failures, both in the United Kingdom and in India, there was good ground for hope that the situation would be cleared up without any undue shock to credit conditions.

I am glad to be able to report that, thanks to the action of British shippers and import merchants in granting allowances in order to clear the goods, and to the cautious attitude of the banks in not unduly pressing for payment, the crisis has passed without any serious dislocation of credit conditions. The result, however, has been attained at a heavy cost to the British exporter. Practically the whole burden has fallen upon him, with the result that a number of old-established and reputable merchants in London and elsewhere have been forced into liquidation through no fault of their own, but solely owing to the action of their Indian clients in refusing to meet their liabilities. Very large numbers of others are financially crippled for years to come, and almost every shipper who traded direct with Indian firms has suffered to some extent. The crisis has all too clearly shown the utter lack of respect for a commercial obligation on the part of many Indian dealers. As I stated last year, it will be a great pity if this large and growing direct trade receives too great a setback through the action of a number of unprincipled traders, but, in view of recent experiences, British exporters, for the present, would be well-advised to confine their transactions to dealers of proved stability and—in doubtful cases—to insist either on cash in London or a cash deposit with the order. They should also, wherever practicable, appoint resident agents to watch their interests. The safest method, undoubtedly, is to ship to the large European import merchants at the ports, but these firms usually have as much business as they can handle and are frequently unwilling to open fresh accounts, so that a British exporter desiring to enter the Indian market is usually forced to accept business from bazaar dealers *faute de mieux*.

Congestion in the Indian Courts.—It may be wondered how it is that in a market such as British India, which is supposed to enjoy the benefits of British justice, losses can be incurred on such a scale without legal satisfaction being obtained through the Courts. The reason is that many commercial courts, notably those in upcountry markets such as Delhi and Amritsar, are so congested that delays of many months—indeed years—occur from the time a suit is filed to the date on which judgment is given and these delays are even greater in the case of appeal to a High Court. It is common knowledge among Indian merchants that, in case they default, their creditors are deterred from filing suits against them owing to the length of time required to obtain a judgment. Even when a judgment is obtained, it is frequently found that the debtor has made over his property to his wife or else he absconds and further interminable delays are experienced in tracing him. In any event, very little satisfaction is obtained. During the past two years, dealers have been defiant and have challenged their creditors to sue them, knowing full well that the latter would not be able to obtain satisfaction within a reasonable time. As a result of representations, additions have been made to the staff of subordinate judges in Delhi, and it is hoped that some relief to litigants has been afforded. It is pointed out that the delay in the disposal of commercial cases is due, not so much to the procedure of the courts, as to deliberate obstruction by litigants, and as Indian courts (outside the Presidency towns) have themselves to dispose of all the preliminaries to a suit, this obstruction is difficult to circumvent. All the same, it is to be hoped that local Governments may see their way to consider the possibility of expediting civil cases. I consider that the knowledge that prompt and effectual steps could be taken to bring defaulters to book would deter many Indian firms from failing to meet their engagements, and would go far to restore India's name for honest trading.

Rate of Exchange on Past Due Bills.—Some delay in clearing up the large number of past due bills in the hands of the banks has been occasioned by recent High Court judgments in India to the effect that past due bills are payable at the rate of exchange ruling on the date of the maturity of the bill and not at the rate ruling on the date of judgment or payment. The last judgment to this effect was given in the Bombay High Court in March last. On July 17th, in the Calcutta High Court, Mr. Justice Greaves, after calling an accountant from one of the exchange banks to prove that, according to the custom prevailing among exchange banks, exchange is calculated on the date of payment, gave a decree for the amount of a claim based on the rate of exchange prevailing at the time of the institution of the suit, and reversed the judgment given in the lower court.*

---

* It should be made clear that this case was decided on the interpretation of a special clause in the contract, and the ruling is, therefore, not of general application.

The general opinion of merchants and bankers is that the only equitable rate is the one ruling at the date of actual payment of the draft. The Associated Chambers of Commerce of India and Ceylon are considering the desirability of moving the Government of India to have it clearly laid down, by statute, that bills drawn in foreign currencies shall be payable at the rate of exchange ruling on the date of actual payment. The Hong Kong Bill of Exchange Ordinance, 1921, affords an absolutely clear precedent for any future legislation. This Ordinance consists of one clause only, which reads as follows : —

> Where a bill payable is drawn out of but payable in this Colony, and the sum payable is not expressed in the currency of this Colony, the amount of the bill, if paid in this Colony and in the currency of this Colony, shall, in the absence of any expressed stipulation, be calculated according to the rate of exchange for sight drafts in this Colony on the day on which the bill is actually paid.

It is to be hoped that (whether as a result of special legislation or of a ruling of the court matters not), the present state of affairs will not be allowed to continue, otherwise a direct incentive is offered to unscrupulous indentors to decline to meet their bills at due date in the hope of exchange rising, and then wait until such time as they may consider to be most suitable for themselves and possibly cause a most serious loss in exchange to the shipper. The only equitable rule is that an exporter who sells and draws in sterling should receive in payment the same amount of sterling irrespective of exchange.

The Visible Balance of Trade.—I am indebted to the Controller of the Currency for the following advance information and table, which will appear in his report on the operations of the Currency Department for the year 1921-22.

The statement below compares India's visible balance of trade during each of the last three years with the average of the five years preceding the War and of the five years of the War. The form of the statement differs from that adopted in previous currency reports and corresponds to that now appearing in the monthly trade statistics published by the Government of India. The detailed heads work up to a plus or minus balance (" plus " representing net export and " minus " representing net import) for each of the three main heads of classification, viz. (1) private exports and imports of merchandise, (2) private exports and imports of treasure, and (3) remittances of funds through the Government leading up to a plus or minus total for the transactions as a whole. There are, of course, numerous other items entering into the balance of trade which are not accurately ascertainable, such as private remittances, exports and imports of capital, &c., but the items detailed below are sufficient to give a rough general idea of India's international account.

(In lakhs of rupees.)

—	Average of 5 pre-war years ending 913-14.	Average of 5 war years ending 1918-19.	1919-20.	1920-21.	1921-22.
Exports of Indian Merchandise (private).	+2,19,50	+2,15,98	+3,09,01	+2,38,30	+2,29,55
Re-exports of Foreign Merchandise (private).	+4,62	+8,16	+17,78	+18,04	+14,06
Imports of Foreign Merchandise (private).	—1,45,85	—1,47,80	—2,00,80	—3,35,60	—2,66,43
Balance of trade in merchandise (private).	+78,27	+76,34	+1,25,99	—79,26	—22,82
Gold (private)* ...	—28,86	—7,81	—10,97	+8,88	+2,79
Silver (private)* ...	—7,21	—2,99	+15	—7,52	—14,96
Balance of Transactions in treasure (private)*.	—36,07	—10,80	—10,82	+1 36	—12,17
Council Bills and telegraphic transfers paid in India.	—41,35	—34,96†	—36,81‡	...	...
Sterling transfers on London sold in India.	+5	+5,50	+18,58	+28,55	...
Transfers of Government securities.	—87	—38	—1,34	—56	+1,53
Interest drafts on India in respect of Government of India securities.	—45	—30	—28	—23	—27
Balance of remittances of funds.	—42,62	—30,14	—19,85	+27,76	+1,26
Total visible balance of trade.	—42	+35,40	+95,32	—50,14	—33,73

* Exclude transactions which do not enter into the balance of trade.

† Includes Rs. 85 lakhs being the funds supplied by Government to finance wheat purchases.

‡ Includes T. Ts. from the Bank of Montreal paid in India for Rs.2,25,63,000.

It will be seen from the above figures that the value of private exports of merchandise in the year 1921-22 was slightly less than in the previous year and slightly above the average of the five pre-war years. The value of imports of merchandise was 21 per cent. below the figure of the previous year, and 81 per cent. above the pre-war average. The net result was that imports exceeded exports by 23 crores, as compared with 79 crores in the previous year. This reduction in the adverse balance points to a slow return to more normal conditions, but a comparison with the five pre-war years, when there was an average balance in India's favour of 78 crores, indicates the extent of the departure from the normal and the leeway still to be made up. If the figures of the exports and imports of merchandise for individual months are examined, it will be seen that in April, 1921, there was an adverse

balance of no less than 8 crores, but subsequently there was an improvement until equilibrium was established in September. The next four months, which coincided with the collapse of the German mark, were much less favourable, but the last two months of the year showed a trade balance in India's favour of 2 and 6 crores respectively.

General Position of British Trade in India.—The following table, compiled by the Director of Statistics, clearly shows the percentage shares of the United Kingdom, the British Empire as a whole and foreign countries in the trade of India during the fiscal year 1921-22 as compared with the two previous years and the last complete pre-war year :—

	Imports.				Exports, including re-exports.				Total Trade.			
	1913–14.	1919–20.	1920–21.	1921–22.	1913–14.	1919–20.	1920–21.	1921–22.	1913–14.	1919–20.	1920–21.	1921–22.
	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.	Share per cent.
United Kingdom	64	51	61	57	24	30	22	20	41	38	44	39
British Possessions	6	10	5	10	14	14	21	21	11	13	12	15
Total British Empire	70	61	66	67	38	44	43	41	52	51	56	54
Total Foreign Countries	30	39	34	33	62	56	57	59	48	49	44	46
Total Value of Trade in R (lakhs) ...	1,83,25	2,07,97	3,35,60	2,66,35	2,48,88	3,30,06	2,58,06	2,45,44	4,32,18	5,38,03	5,93,66	5,11,79
PRINCIPAL COUNTRIES.												
British Empire—												
United Kingdom	64·1	50·5	61·0	56·7	23·7	29·6	21·9	20·1	40·7	37·7	44·1	39·1
Ceylon	·4	1·2	·6	·5	3·7	3·4	4·6	5·0	2·3	2·6	2·3	2·7
Straits Settlements	1·9	2·9	1·4	1·5	2·8	2·8	3·6	3·1	2·4	2·5	2·3	2·3
Hongkong	·5	1·3	·7	·6	3·2	2·8	2·8	2·7	2·0	2·2	1·7	1·6
Australia	·5	1·6	·4	3·5	1·6	1·0	2·4	1·6	1·2	1·2	1·3	2·6
Egypt	·2	·6	·5	·3	·9	1·2	1·5	0·9	·6	1·1	·9	·6
Other British Possessions	2·4	2·9	1·4	3·9	2·1	3·7	6·2	7·6	2·8	3·7	3·4	5·1
Total British Empire	70·0	61·0	66·0	67·0	38·0	44·0	43·0	41·0	52·0	51·0	56·0	54·0
Foreign Countries—												
Germany	6·9	—	1·4	2·7	10·6	·4	3·4	6·7	9·0	·3	2·3	4·6
United States	2·6	12·1	10·5	8·1	8·9	14·9	14·8	10·4	6·2	13·8	12·4	9·2
Japan	2·6	9·2	7·9	5·1	9·2	14·3	9·5	15·5	6·4	12·3	8·6	10·1
Java	5·8	9·4	4·6	8·9	·8	·6	1·2	1·7	2·9	4·0	3·2	5·4
France	1·5	·8	1·1	·8	7·1	4·8	3·1	4·0	4·8	3·8	2·0	2·4
China (exclusive of Hongkong and Macáo)	·9	1·8	·9	1·0	2·3	3·4	3·3	4·5	1·7	2·8	1·9	2·7
Belgium	2·3	·3	1·6	2·0	4·9	3·1	5·0	3·3	3·8	2·0	3·1	2·6
Turkey, Asiatic	·3	·4	·3	—	1·2	2·7	2·8	·2	·8	1·8	1·3	·1
Italy	1·2	·6	1·2	·8	3·2	2·4	2·6	2·4	2·3	1·7	1·8	1·5
Other foreign countries	5·9	4·4	4·5	3·6	13·8	9·4	11·3	10·3	10·1	7·0	7·4	7·4
Total Foreign Countries	30·0	39·0	34·0	33·0	62·0	56·0	57·0	59·0	48·0	49·0	44·0	46·0
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

It will be observed that the share of the Empire as a whole in the total overseas trade of India has fallen during the year from 56 per cent. to 54 per cent., while that of the United Kingdom is reduced from 44 to 39 per cent. and is now 2 per cent. below the pre-war basis in 1913-14. In the import trade, with which this report is primarily concerned, the share of the United Kingdom has declined from 61 to 57 per cent., but it is satisfactory to record that the contraction in the case of our two principal competitors, viz., the United States and Japan, has been even greater. Imports from the United States of America fell from 10·5 per cent. to 8·1 per cent., and those from Japan from 7·9 per cent. to 5·1 per cent. The most notable increases have been in the case of Java from 4·6 to 8·9 per cent. (due to very heavy imports of sugar, and, to a lesser degree, of quinine), Germany from 1·4 to 2·7 per cent., and Belgium from 1·6 to 2 per cent. On the whole, therefore, it may be stated, with confidence, that notwithstanding the world-wide depression and the peculiar difficulties which have been experienced by British industry during the past year, the United Kingdom is maintaining its position in its most valuable overseas market in a remarkable way, which augurs well for the future.

In Appendix I, page 141, will be found a statement showing the principal articles imported from the United Kingdom. During 1921-22 cotton piece goods accounted for 25·5 per cent., machinery and millwork 18·8 per cent., railway rolling stock and plant 12·2 per cent., iron and steel 7 per cent., cotton yarns 5·7 per cent., hardware 2·5 per cent., and instruments and apparatus (mainly electrical), 2·4 per cent. Over 95 per cent. of the British shipments to India, which totalled just over £100,000,000 during the year, represented manufactured goods. It is noteworthy that the share of cotton piece goods for the first time for decades and owing to abnormal conditions, has declined to only a little more than one quarter of the whole and is very closely followed by machinery. This is purely fortuitous and the reasons will be found in the detailed analysis of the import trade which is given in Chapter II. Although a study of this analysis reveals a falling-off in practically every branch of trade, there is some consolation to be found in the fact that the trade of our competitors has, with the exceptional cases of Germany and Belgium, contracted in even greater proportion. Stocks of most standard imports are not excessive, and in some cases are well below normal. There are many signs that the country has passed the worst of the depression and that trade is slowly improving, and with a good south-west monsoon there is firm ground for hope that we are on the threshold of a period of steady recovery and more favourable conditions.

India's capacity of absorbing increased quantities of imports will largely depend on the future of her export trade, which, in turn, hinges on the prospects for increased shipments of produce to Central Europe, Russia, Japan and the United States. The

reconstruction of the Continent seems likely to be slow and it appears doubtful whether the market will receive much support from that quarter. Conditions in Japan and the United States, however, are improving, and it is possible that the United Kingdom may be in a position to take greater quantities of Indian produce, particularly if the improvement in the tea trade continues. The share of the British Empire in the exports, including re-exports from India, last year was 41 per cent. as compared with 43 per cent. in 1920-21. This contraction was entirely due to reduced takings by the United Kingdom, whose share fell from 22 to 20 per cent. Germany increased her proportion from 3·4 to 6·7 per cent., and trade with Hamburg was quite brisk during the summer of 1921 until the collapse of the mark in October effectually checked any further improvement. Shipments to the United States were on a reduced scale and the American share declined from 14·8 to 10·4 per cent. Japan, however, owing to her increased offtake of Indian raw cotton, improved her position from 9·5 to 15·5 per cent.

Foreign Competition.—The outstanding features of the year have been the re-entry of German goods into the Indian market on a considerable scale and continued competition from Belgium. A study of the analysis of the various import trades in Chapter II shows that our other competitors have suffered even more than the United Kingdom from the effects of the unprecedented depression. Although foreign competition is much keener and enters into a constantly widening field, British exporters have, in spite of the serious industrial upheaval at home with its concomitant of high prices, been able, on the whole, to maintain their position. There are several features, however, which deserve special mention and I will, therefore, deal with the principal competing countries in turn.

American Competition.—After advancing steadily, both during and since the war, imports from the United States declined from 35¼ crores in 1920-21 to 21·6 crores in the year under review, and America now ranks third among the countries exporting to India, having been displaced during the past year by Java. In Appendix I, page 142, will be found a summary table showing the imports from the United States, under the principal headings, during the past three years, alongside the figures for the last pre-war year. The principal imports, in order of importance, are mineral oils (22·5 per cent.), machinery and millwork (20·89 per cent.), iron and steel (20·47 per cent.), hardware (4·78 per cent.), instruments and apparatus (4·73 per cent.), wheat (3·7 per cent.), motor-cars and cycles (3 per cent.). A decrease is shown under almost every heading, which was only to be expected in a year of such great depression.

The few American merchant houses established in India have suffered as great, if not greater, losses than their British rivals. One of the most powerful of them is winding up its Indian business with a view to cutting its losses, and those firms which conducted a commission indent business with the bazaar have largely spent the year in clearing up their outstandings. There is, however, considerable activity on the part of American manufacturers in appointing mercantile agents and sending specialists to India, so that they may be organised when trade improves. I have met several instances recently where American technical representatives have been very active in studying the wishes of large buyers of plant,

and have spared no effort in meeting their special needs. The view has been expressed on several occasions, particularly in the case of machinery, that American travelling salesmen are frequently more fully conversant with the practical working of their machines and are able to give more valuable advice on technical matters than their British rivals, who are often merely commercial salesmen and not engineers in addition. These may be exceptional cases, and, of course, a firm which is entering a trade for the first time is frequently prepared to make more strenuous efforts just to gain a footing than one which has enjoyed a lucrative business for many years. Nevertheless, a feeling is growing among buyers that American manufacturers are prepared to follow up and support their representatives on the spot by a much more liberal supply of information, literature and advertising matter than is the case with many British firms. The American maker also appreciates the advantage of " service " in a country such as India, and recognises the need for ample supplies of spare parts and the services of specialists for the purpose of studying the needs of and advising buyers with regard to new developments, and also of consulting with them as to how the maximum efficiency can be obtained from their existing plant. This trait has been specially noticeable in the industrial plant and machinery and motor trades.

As a result of a special mission conducted by a Trade Commissioner in 1921, it is understood that the United States Government now propose to appoint a permanent American Trade Commissioner in India, and that the first incumbent will take up his post during the coming autumn. This would seem to presage increased American interest in the Indian market.

Japanese Competition.—After a period of remarkable expansion during the war, imports from Japan reached their highwater mark in 1920-21 with a total of 26¼ crores of rupees (say £26,500,000). During the past year, however, they have contracted by almost one-half to 13½ crores (or approximately £9,000,000 at exchange of 1*s.* 4*d.*). The principal articles imported during the past year were cotton piece goods (28 per cent.), cotton yarns (16·6 per cent.), matches (13·6 per cent.), silk manufactures (10·4 per cent.), glass and glassware (6·3 per cent.). A list of the items will be found in Appendix I, page 143, from which it will be seen that, with the exception of cotton yarns and piece goods, the shipments from Japan do not clash to any extent with those from the United Kingdom, but are mainly composed of the cheaper articles for the bazaar trade, and therefore compete with German, Austrian and Czecho-Slovakian productions.

During the war Japanese competition threatened to be a serious factor, and entered into a wide variety of trades in which the United Kingdom had hitherto been supreme. Now that British goods are readily available at competitive prices, Indian buyers are reverting to their old sources of supply, and the serious competition from Japan is practically limited to cotton textiles, details of which are given in Chapter II, page 39.

German Competition.—Imports from Germany, which, in 1913-14, amounted to £8,440,000, began to enter India in 1920-21, during which year Rs. 4¾ crores (£4,748,000) worth were received. Last year, however, no less than 7¼ crores worth entered the country (which, at exchange of 1*s.* 4*d.*, is the equivalent of £4,830,000), and the share of Germany in the total trade rose from 1·4 to 2·7 per cent. In Appendix I, page 144, will be found a summary table showing the values of each separate item. The principal headings, in order of importance, are dyeing and tanning substances (19·7 per cent.), iron and steel (17 per cent.), hardware (8 per cent.), machinery and millwork (7·6 per cent.), glass and glassware (4·3 per cent.), copper (3 per cent.), and chemicals (3 per cent.). The balance represents a very wide range of articles, such as miscellaneous metals, paper, woollen goods, beer, salt, electrical accessories, apparel, haberdashery, etc.—in fact, precisely the assortment of cheap goods for which German makers enjoyed a reputation in the Indian bazaars before the war.

The principal reason for this revival of German competition is, of course, the great advantage afforded by the depreciated mark exchange. There is no sentiment in the Indian bazaars. Advantage is being taken to the utmost of the cheap prices ruling for German goods, and Indian firms are showing the greatest keenness to secure German agencies. It remains to be seen whether, in view of the violent fluctuations of the mark and the constantly varying cost of production in Germany, German manufacturers will be able to adhere strictly to the terms of their contracts, both as regards price and delivery. In the meantime, British manufacturers of dyestuffs, iron and steel and industrial machinery and plant are regularly being undersold, and there would appear to be no relief from this state of affairs until the financial position of Germany becomes stabilised. A German Consul was appointed to Calcutta during the year, and although there are restrictions on the residence of German subjects in India, German commercial interests are being safeguarded by local British, foreign and Indian merchants.

Belgian Competition.—Belgian imports, which amounted to 5¼ crores in 1920-21, remained practically stationary during the year, but their share of the aggregate trade rose from 1·6 to 2 per cent. No less than 64 per cent. consist of iron and steel, 4½ per cent. of glass and glassware, and 3½ per cent. of machinery and millwork. In the early part of the year Belgian quotations for steel bars, sheets and wire nails were far below those obtainable from the United Kingdom, but now that British prices have been materially reduced, it is to be hoped that a better showing will be made next year. Belgian makers have experienced no difficulty in regaining their trade in cheap window glass. In Appendix I., page 145, will be found a table showing the value of the trade under each heading.

Canadian Trade with India.—Canada is making a determined effort to increase her shipments to India, which have hitherto been on a very small scale and have shown little tendency to expand. A direct steamship service was inaugurated by the Canadian Government Merchant Marine Ltd. at the end of 1920, but the results have been somewhat disappointing and difficulty has been experienced in inducing Indian shippers of jute products, tea, &c., to divert their shipments from the New York route to the direct line. A Canadian Government Trade Commissioner was appointed to India during the year and opened his office in Calcutta in January last. Some success has already been achieved in inducing American manufacturers of motor cars to serve the Indian market from their Canadian factories and the interest of Canadian manufacturers is being stimulated in Indian Government requirements of railway rolling stock, logging and saw milling machinery, &c., &c. In Appendix I, page 146, will be found a table of the principal items obtained from Canada last year (exclusive of Government Stores) showing that of a total import of Rs.42 lakhs motor cars and motor cycles accounted for 21 per cent., paper and pasteboard 7 per cent., and paper making materials 7 per cent.

The Indian Budget, 1922/23.—Following upon a succession of deficits during the years 1918/19, 1919/20, 1920/21 and 1921/22 amounting in all to 90 crores of rupees, the Government of India were obliged to budget in March last for an estimated deficit of some 31¾ crores during the current financial year 1922/23. The Finance Member proposed to meet this deficiency by increased

duties on customs, which, it was estimated, would bring in 15 crores, by a 25 per cent. advance in railway fares producing 6 crores, by doubling the salt duty, thus increasing the revenue under that head by 5 crores, and by increasing the income tax and super-tax to yield an extra 2¼ crores, the total additional revenue from these measures being estimated at slightly over 29 crores in 1922/23 and at 1 crore in 1921/2 leaving an uncovered deficit of approximately 2¾ crores of rupees. The budget debates in the Indian Legislature have been so widely reported that it would be out of place to refer to them here. Suffice it to say that strong opposition was encountered involving the abandonment of the increased salt tax and various modifications in the customs duties and other proposed imposts, the net result being that the Legislature declined to pass some 9½ crores of additional taxation and the Government of India are faced with this deficit.

From the point of view of the British exporter to India, the most important sections of the budget are those dealing with increased customs import duties and it will probably be found useful if I make a few brief comments on the principal changes which have been made.

Cotton Yarns.—An import duty of 5 per cent. is now imposed on imported cotton yarns. The Government of India had hitherto refrained from taxing imported yarns as they were considered to be the raw material of the important handloom weaving industry. In Chapter II, page 34, will be found an extract from the Commerce Member's speech, in which he emphasises the fact that it is only on account of the acute financial position that Government agreed to the imposition of this tax, which is estimated to bring in about 50 lakhs of rupees (say £300,000). I do not think that a 5 per cent. duty will have the effect of checking imports to any appreciable extent as the bulk of the imports are of the finer counts—40's and upwards, which are as yet not produced in any appreciable quantity by Indian mills, and which must therefore be imported from overseas. The imposition of the duty may, however, act as a stimulant to the spinning of finer counts in India, as no excise duty is levied on the locally-spun product.

Cotton Piece Goods.—The duty on imported piece goods remains unchanged at 11 per cent. with an excise on Indian mill made cloth of 3½ per cent. The Government of India proposed to raise the import duty to 15 per cent. and the excise to 7½ per cent., but so much political feeling was generated over the proposal to increase the excise that the Legislative Assembly very wisely voted that both imposts should remain as before. I would commend the Official Report of the Debates to the careful study of Lancashire readers who will find that it is most illuminating in showing the intense feeling displayed by Indian political leaders on the question. The whole subject is so important that I have dealt with it in some detail in Chapter II.

A copy of the debates is in the possession of the Department of Overseas Trade and can be consulted on application.

Iron and Steel.—The increase in the tariff on iron and steel from 2½ to 10 per cent. will give, for the first time, appreciable protection to the Indian iron and steel industry, although it may adversely affect the local engineering industries which have to rely on imported iron and steel. It seems regrettable that at a time when India requires such large quantities of structural steel to make good the depreciation during the war and to build up her nascent industries, the cost of steel—the raw material of almost all industries—should be artificially raised as a result of import duties.

Machinery.—The original budget proposal was to increase the duty from 2½ to 10 per cent., but industrial interests in the Legislative Assembly were too strong and the proposal fell through. The tariff on power machinery remains, therefore, at 2½ per cent., while that on machines to be worked by manual or animal labour is raised to 15 per cent.

Railway Plant and Rolling Stock.—The duty on this large and important item is raised from 2½ to 10 per cent.

The duty on articles formerly assessed at 11 *per cent.* is now raised to 15 per cent. This may be termed the general duty, as it includes the great majority of articles including such important headings as apparel, chemicals, hardware, provisions, dyes, glassware, soaps, paints, paper, &c., &c. In all cases, the effect of the tariff will almost certainly be to increase the cost to the consumer, but in certain instances such as cement, certain kinds of hardware and tools, cutlery, &c., it will also afford protection to local industries, and the British export trade may be affected.

The duty on articles formerly assessed at 20 *per cent.* is now raised to 30 per cent. This heading includes, among other items, motor cars and motor cycles, confectionery, clocks, watches, jewellery, plate and silk piece goods. The effect on the British motor car trade is likely to be most serious, as not only will all imports be reduced, but the effect of the increased duty will be felt most severely in the case of the higher-priced British car. Judging by the returns of trade during the first two months of the present fiscal year, we find a considerable falling off in the total trade as compared with the corresponding period of last year, a very slight increase in customs revenue, a serious decline in British shipments of cars and a corresponding increase in the imports from America. Steps are being taken by the Motor Trade Associations in India to bring the position to the attention of Government and it is hoped that Government will realise the unwisdom of seriously damaging a valuable trade, and particularly the British share in it, for the sake of a negligible increase in revenue. The important British export of confectionery is also seriously threatened by this increase in duty, which will probably give a fillip to the Indian manufacture of sweets, &c.

These are a few of those changes in the new tariff which will affect British interests. The complete tariff schedule for the nine months April to December, 1922, from which the present rate of duty on any specific article can be ascertained, was published in the Board of Trade Journal, issue of May 4th, 1922.

The first and most widespread effect of the new tariff will be a considerable increase in the cost of living which will probably bear most heavily upon the European community in India, dependent, as it very largely is, on imported stores, provisions, clothing, &c., &c. Although authentic statistics with regard to the cost of living of the European and Westernised Indian communities are not available, experience shows that prices in India have steadily risen during the past two years at a time when, in the United Kingdom, America and elsewhere, they have fallen steadily.

The Indian Fiscal Commission.—[(By the delay in the publication of the report of the Indian Fiscal Commission Mr. Ainscough was prevented from commenting upon that document owing to the fact that his annual report was actually in the printer's hands when the Fiscal Commission's report was issued. The following comments do not therefore attempt to do more than summarize this lengthy and momentous document.)

A survey of the course of industrial development in India leads the Commission to the conclusion that the industrial development of India has not been commensurate with the size of that country, its population, and its natural resources. The advantages and possible disadvantages which would attach to a considerable development of Indian industries are weighed and the conclusion reached is that such a development would be greatly to the advantage of the country as a whole, creating new sources of wealth, encouraging the accumulation of capital, enlarging the public revenues and generally stimulating national life and developing national character.

The Commission then set out the argument for and against the adoption of the policy of protection in India with a view to securing the rapid progress of such development.

No further development of direct taxation is, in the Commission's view, immediately possible; therefore for revenue purposes import duties must remain high for some considerable time to come. A high customs revenue inevitably favours a policy of protection. The Commission conclude that it is in the interests of consumers generally, and of steady industrial progress, that the policy of protection should be applied with discrimination so as to make the inevitable burden as light as is consistent with the due development of industries. They are of opinion that the temporary loss involved will be more than made good by the ultimate gain, and the balance of advantage is heavily on the side of a policy of protection.

In discussing the application of this policy emphasis is laid upon the necessity for the appointment of a competent and impartial Tariff Board to advise on the imposition of the tariff, which tariff, it is stated, should consist partly of revenue and partly of protective duties. The greatest care should be exercised in the selection of industries for protection, the rate of such protection being settled by the Tariff Board, and industries in unsuitable locations or those which satisfy only a very inconsiderable proportion of the needs of the country should not be eligible for protection. Industries essential for national defence should be protected, but it is suggested that basic industries and manufacturers of machinery should not be protected but should be assisted by bounties. Moreover, no duty should be imposed on partly manufactured articles until the Tariff Board have examined the effect of such duty with great care. Finally, protection should be withdrawn as soon as circumstances permit.

The Commission are well aware of the inherent dangers and disadvantages of protection, but they think that the opportunities, in such a land as India, for formation of monopolies would not be very favourable, and in any event the proposed Tariff Board would be in a position to withdraw protection in such cases, if necessary. The details of the control to be exercised by this Tariff Board are set out fully and include the steps that could be taken in order to restrict the rise of prices and the inclusion of unsuitable industries.

The Commission, being well aware that the mere imposition of protective duties, however scientifically contrived, will not, by itself, produce the full industrial development desired, put forward several supplementary measures for consideration. The condition that firms should agree to afford facilities for technical training to Indian apprentices is strongly urged. The question of railway rates and internal transport facilities is discussed, together with coastal shipping rates, which latter the Commission point out are unduly high. Also the question of anti-dumping legislation, and legislation in the case of countries having a depreciated exchange is dealt with.

As regards excise duties the conclusions of the Commissioners are, roughly, that these may properly be imposed to check the consumption of injurious articles, and especially of luxuries coming under this category. Otherwise they should be imposed for revenue purposes only. The vexed question of the Indian cotton excise is dealt with very fully and the recommendation is made that the Tariff Board should examine at once the claims of the Indian cotton mill industry to protection. It is then claimed that by doing so the matter will become a question between the Indian producer and the Indian consumer instead of between Bombay and Lancashire.

With regard to export duties, the Commission hold that when such duties are used for protective purposes the tendency must always be to impose comparatively high rates, which rates will

almost invariably be a serious burden on the producer. The Commission therefore recommend that export duties should be imposed for revenue purposes only. They are in favour of small cesses in individual cases but they are opposed to the duty on such things as tea and cotton and recommend that the duty on hides and skins should also be removed, although they agree that there is no necessity to remove the duty on rice. Differential export duties for retaliation purposes should only be used in exceptional cases.

The claim for the imposition of export duties, or other method of restriction on the export of food grains, is considered by the Commission to be based on faulty argument. They, therefore, recommend that no restrictions should be levied on the export of such grains as a general rule, basing their views on the assumption that increased production will in due course remove the difficulty. Temporary export duty should be imposed, exceptionally, when the exportation of the grain is required to be controlled.

With regard to imperial preference, the Commission set out in detail the history of this movement up to the time of the recommendations of the Imperial Conference of 1917. Broadly speaking, India imports manufactures and exports raw materials and food stuffs; while effective preference is sometimes given to manufactured goods, in the case of raw materials and food stuffs preference is of little value as such articles are normally admitted free. If preference were adopted the gain to India therefore in the mind of the Commission would be but small; and she cannot herself grant extensive preference without serious loss. The whole question of the application of such a preference between India and the United Kingdom should be investigated by the Tariff Board.

The Commission state that there would appear to be a feeling of suspicion with regard to the use of foreign capital in India, the argument apparently being that if India obtains protection new industries will arise and that if such industries are founded on Indian capital then the profits would be to the Indian; otherwise the advantage of India's sacrifice in undertaking protection would go to the foreigner. The Commission point out that such an argument is faulty, the admission of foreign capital giving an advantage to India in the long run, as by so doing she attains her objects more quickly by the introduction of up-to-date methods.

The Commission conclude their report with an appeal to British opinion to endeavour to understand more nearly the Indian position, pointing out that increased prosperity in India must mean increased demand for British manufactures. The fact that India proposes to adopt protection will not necessarily be inimical to British interests as for many years to come the protection of Indian industries will be confined to the simpler forms of manufactured goods and these are precisely those in which the United Kingdom has the smallest interest.

A Minute of Dissent is attached to the report, and is signed by five out of the eleven members of the Commission, including the

President. The main ground of dissent is the desire of the signatories for an unqualified pronouncement in favour of protection.

No useful purpose would be served by attempting to estimate the probable results of the recommendations of the Commissiou at present. It will, however, be a matter of vital interest to United Kingdom houses interested in Indian trade to watch the steps taken by the Government of India regarding this report, and, if approval is given, the subsequent carrying out of the recommendations of the Commission by its suggested Tariff Board.]

SUMMARY OF RECOMMENDATIONS.

Reference.

"To examine with reference to all the interests concerned the Tariff policy of the Government of India, including the question of the desirability of adopting the principle of Imperial Preference, and to make recommendations."

Preliminary Conclusions.

That the industrial development of India has not been commensurate with the size of the country, its population, and its natural resources, and that a considerable development of Indian Industries would be very much to the advantage of the country as a whole. (Chapter IV.)

Principal Recommendations.

1.—(*a*) That the Government of India adopt a policy of Protection to be applied with discrimination along the lines indicated in this Report. (Chapter V.)

(*b*) That discrimination be exercised in the selection of industries for protection, and in the degree of protection afforded, so as to make the inevitable burden on the community as light as is consistent with the due development of industries. (Chapter VI.)

(*c*) That the Tariff Board (see below) in dealing with claims for protection satisfy itself:—

(1) That the Industry possesses natural advantages;
(2) That without help of protection it is not likely to develop at all, or not so rapidly as is desirable; and
(3) That it will eventually be able to face world competition without protection. (Chapter VII.)

(*d*) That raw materials and machinery be ordinarily admitted free of duty, and that semi-manufactured goods used in Indian industries be taxed as lightly as possible. (Chapter VII.)

(*e*) That industries essential for purposes of National Defence and for the development of which conditions in India are not unfavourable, be adequately protected if necessary. (Chapter VII.)

(*f*) That no export duties be ordinarily imposed except for purely revenue purposes, and then only at very low rates (Chapter XI); but that when it is considered necessary to restrict the export of food grains, the restriction be effected by temporary export duties and not by prohibition. (Chapter XII.)

2. That a permanent Tariff Board be created whose duties will be, *inter alia*, to investigate the claims of particular industries to protection, to watch the operation of the Tariff and generally to advise Government and the Legislature in carrying out the policy indicated above. (Chapter XVII.)

3.—(*a*) That no general system of Imperial Preference be introduced; but

(*b*) That the question of adopting a policy of preferential duties on a limited number of commodities be referred to the Indian Legislature after preliminary examination of the several cases by the Tariff Board.

(*c*) That, if the above policy be adopted, its application be governed by the following principles:—

(1) That no preference be granted on any article without the approval of the Legislature.

(2) That no preference given in any way diminish the protection required by Indian industries.

(3) That preference do not involve on balance any appreciable economic loss to India.

(*d*) That any preference which it may be found possible to give to the United Kingdom be granted as a free gift.

(*e*) That in the case of other parts of the Empire preference be granted only by agreements mutually advantageous. (Chapter XIII.)

4. That the existing Cotton Excise Duty in view of its past history and associations be unreservedly condemned, and that Government and the Legislature start again with a " clean slate " regulating their excise policy solely in the interests of India. (Chapter X.)

SUBSIDIARY RECOMMENDATIONS.

5. That the proviso to Section 20 of the Sea Customs Act be repealed, and that Customs Duty be ordinarily levied on goods belonging to Government (paragraphs 285-288).

6. That difficulties in the shape of shipping rebates (paragraph 132), or unfair advantages like dumping (paragraphs 133-139), depreciated exchanges (paragraph 140), bounty-fed imports from abroad (paragraph 141), be investigated and, where possible, removed.

7. That industrial development be promoted by giving a more industrial bias to primary education (paragraph 122), and providing opportunities for training apprentices (paragraphs 123-124) and organisations for increasing the mobility of labour (paragraph 125).

8. That no obstacles be raised to the free inflow of foreign capital, but that Government monopolies or concessions be granted only to companies incorporated and registered in India with rupee capital, such companies to have a reasonable proportion of Indian directors, and to afford facilities for training Indian apprentices. (Chapter XV.)

9. That the Tariff be not ordinarily employed for retaliation, or as a means of aggression (paragraphs 280-284).

10. That the Tariff be elaborated with a view to remove ambiguities, and that the system of specific duties and tariff valuations be cautiously extended (paragraphs 266-278).

Political Events in India during the Period.—The past year has been marked by further substantial progress on the part of the Indian Legislatures, both Imperial and Provincial, but has also been marred by widespread unrest throughout the country culminating in outbreaks of open violence in several places.

The Legislative Assembly and Council of State have already made a name by the tone of their debates and the sense of responsibility which characterised them. The past budget session, in particular, showed very clearly the growing power and influence of the Assembly. The fearlessness of the criticism, the well-informed speeches, and the readiness to accept a workable com-

promise rather than press for an inaccessible ideal augurs well for the future of Parliamentary Institutions in India. When it is remembered however, that of approximately 250 millions of people residing in British India in the area affected by the reforms, there are only one million registered voters for the Imperial Legislative Assembly, that of these one million voters only about 182,000 polled at the last election, and that a considerable proportion of these were illiterate, it will be realised that India has still a long and stony path to traverse before she can be said to enjoy representative Government in any true sense of the term.

The activities of the non-co-operation party which became progressively more lawless and dangerous in view of the inactivity of Government came to a climax in a series of riots involving considerable bloodshed and loss of life. Government, which had hitherto stayed its hand in order, if possible, to avoid being accused of coercion, was forced to take active steps to check the movement, which was rapidly tending to subvert all order and respect for authority. Mr. Gandhi was sentenced to six years imprisonment in March, 1922, and most of the leaders throughout India have now been convicted and imprisoned. This display of authority had an almost immediate effect, the result being that during the past months political feeling has been far less intense and the mercantile community, both European and Indian, have, to some extent, regained their confidence in the future, which had been so severely shaken during the past year.

Perhaps the most significant recent development has been the display of strong political feeling among Indian merchants. In the old days, the relations existing between the European and Indian mercantile communities were most cordial and friendly, as might be expected of two bodies with a common interest in trade, neither of whom paid much attention to outside politics. Whether it be due to a certain soreness on the part of Indian importers as a result of their heavy liabilities to overseas shippers, or perhaps feelings of envy at the success of their European competitors in India, it must be admitted that very strong racial sentiments have been expressed by Indian Chambers of Commerce and public bodies, and that relations between the two business communities have been somewhat strained. A prominent British member of the Fiscal Commission and of the Assembly, who is also one of the leading business men in Western India, recently referred to the Indian evidence before the Commission in the following terms :—

" One feature of the evidence taken has pained me very much, and that is the widespread feelings of ill-will that exist towards British merchants, British industrialists, and British officials. Although these feelings have been in evidence on all sides and to a degree that I had never suspected before, and although they have been uttered with a conviction that has impressed me with the entire sincerity of the witnesses, I am certain that these opinions are based on deplorable misunderstandings and on an imperfect appreciation of history and economic laws, and, further, that

those who hold them do grave injustice to a large body of Englishmen, Scotsmen, and Irishmen who have done well by India and who feel nothing but goodwill towards India and its peoples, and more particularly to all those Indians with whom they have worked in most friendly co-operation for some generations past."

I touch upon this thorny question of racial feeling advisedly as I think British interests should be aware of the position, so that they may approach their Indian business with knowledge of the facts of the case, and so that they may deal with the many problems which are bound to arise in a tactful manner. I am hopeful that when trade improves old sores and grievances will be forgotten and the two communities will once more be drawn together by the powerful ties of mutual interest. Conditions in India are changing more rapidly to-day than has been the case for decades. While the changes are primarily political, they are bound to influence every branch of economic life and the business man, both in the United Kingdom and in India, who has a stake in the country, must study those changes, and re-orientate his policy in the light of them if he is to be successful in the future. Political and racial feeling is bound to weaken our commercial and industrial position in India if it is allowed to grow unchecked. I am glad to be able to state that during the past few months the outlook has been distinctly brighter. The next few years, however, are bound to be a most difficult period of transition, and it will largely depend upon the courage, tact and goodwill of the British commercial community in India if we are to maintain that remarkable position of power and influence which has been built up by generations of British merchants on the firm rock of rectitude, trust and fair dealing. The amicable and mutually-helpful relations which, in the short space of less than two years, have developed between the non-official British and Indian members of the Legislatures is a good omen for the future. The interests of the British and the Indian trader alike are bound up with the prosperity and progress of the country on sound and orderly lines and the maintenance of a high standard of business ethics and efficiency. Although there are many formidable rocks ahead, and although many adjustments may be required in our methods of trading, I am still sufficiently optimistic to believe that the British exporter and merchant will rise to the occasion and that he will continue not only to enjoy as large a share of India's overseas trade, but also to play his part in the political and general economic advancement of a more enlightened and a greater India.

One hears many criticisms from Indians of the selfishness of the British manufacturer and exporter—in fact, this has become a stock expression, which is used without any examination as to its real truth, and which probably originated in the violent controversies over the cotton excise duties. The fallacy underlying it is a general lack of recognition that all trade is mutual. If the critics only regarded the other side of the picture dispassionately and acknowledged the debt which India owes to British

capital and energy in developing the economic resources of the country, I think they would realise that the balance of advantage lies heavily on the side of India. If the British interest in India were purely a selfish one, and if our commercial intercourse merely resulted in that " drain " of Indian resources, which some Indian politicians never tire of asserting, then indeed would our position be weak and untenable. Fortunately it is precisely that bond of mutual advantage which constitutes the firm basis of our trading relations. Is it too much to expect that when the subsidence of the present heated feeling permits clearer vision, this dominant fact will be appreciated and will tend to cement and strengthen our economic position in India? I think not.

The Railway Committee's Report.—The Committee appointed by the Secretary of State to enquire into the administration and working of Indian railways, which was presided over by Sir William Acworth, K.C.S.I., signed its report in August, 1921, and in Appendix II will be found a summary of its recommendations. So important and far-reaching were many of the changes recommended by the Committee that considerable deliberation has been necessary before action could be taken to give effect to them. The recommendations that Indian railways should be entrusted to a special Member of Council at the head of a new Department of Communications, including posts and telegraphs, road transport, ports, &c., and that the Railway Board should be reconstituted and enlarged in the form of a Railway Commission are still under examination and no action has so far been taken. The vital question of State *versus* company management, on which the Committee itself was divided, still remains under consideration, and will be one of the first items to be considered by the proposed Central Advisory Council when it is constituted. Definite action has, however, been taken on the main financial recommendations of the Committee.

Pursuant to a resolution passed by the Legislative Assembly on September 13th, 1921, a Railway Finance Committee drawn from both Houses of the Legislature was appointed with Mr. (now Sir Malcolm) Hailey as Chairman, to consider certain matters arising from the Report of the Railway Committee, namely :—

(1) The separation of railway from general finance ; and

(2) The requirements of railways in regard to capital expenditure during the next ten years,

and to make recommendations.

With regard to the first head of reference, the Committee reported as follows :—

" We have been led to the conclusion that separation of railway finance in the sense understood by the Railway Committee is not at present a practicable proposition. It may be advisable, when conditions become more normal and financial equilibrium is re-established, to re-examine the question."

Their recommendation under the second heading reads as follows :—

" We have taken account of the capital commitments which will fall upon the Government in regard to the repayment of loans maturing during the next five years, and also of the demands which are likely to fall upon the money markets in respect of new funds which must be raised by the Central and Provincial Governments for irrigation and other schemes, such as the Bombay Development. We have also borne in mind the problems which confront Government in respect of the large amount of floating debt outstanding in the shape of Treasury Bills, and also as regards the position of its older securities. *After weighing all the factors involved, we consider that funds to the extent of* 150 *crores should be devoted to railway capital purposes during the next five years.* In placing their case before us the Railway Board asked for a minimum expenditure of 30 crores a year for the next five years; and the conclusion at which we have arrived after considering the financial issues to which we have referred above is that we should be justified in recommending that funds should be provided to this extent. We recognise that the provision of funds of this amount may involve our supplementing our Indian loans by outside borrowing, and we are prepared to support action in this direction provided that such borrowings are effected in the cheapest market."

This special capital expenditure programme of 150 crores (roundly, £100,000,000) to be expended during the next five years is bound to be of benefit to British manufacturers, who should be able to secure the bulk of the orders in view of the fact that they are thoroughly conversant with Indian railway requirements and have supplied almost the whole of their equipment in the past. Moreover, the greater part of the capital required will probably be raised in the London market and the orders will be placed through the normal channels, *i.e.*, the India Office Stores Department, and the London Offices of the Indian Railway Companies. I would commend firms who may be interested to the account given in Chapter III of the proposed changes in the method of purchase of Government stores, as—although these changes may not be in operation in time to affect the purchases made under this present programme—they will very materially bear upon the position in the future.

Events in Afghanistan.—After prolonged negotiations, a treaty was signed at Kabul by the representatives of the British and Afghan Governments on November 22nd, 1921.

After providing for the mutual respect of all rights of internal and external independence and the definition of boundaries, it is laid down that a British Minister and staff shall be received at Kabul and an Afghan Minister shall be appointed to London. The Government of Afghanistan agrees to the establishment of British Consulates at Kandahar and Jalalabad, whilst His Majesty's Government agrees to the establishment of an Afghan Consul-General at the headquarters of the Government of India and three Afghan Consulates at Calcutta, Karachi and Bombay. The British Government agrees that whatever quantity of material is required for the strength and welfare of Afghanistan, such as all kinds of factory machinery, engines and materials and instruments for telegraphs, telephones, &c., which Afghanistan may be able to buy from Britain or the British Dominions or from other countries of the world, shall ordinarily be imported without let or hindrance by Afghanistan into its own territories from the ports of the British Isles and British

India. Similarly, the Government of Afghanistan agrees that every kind of goods, the export of which is not against the internal law of the Government of Afghanistan, and which may, in the judgment of the Government of Afghanistan, be in excess of the internal needs of Afghanistan and is required by the British Government, can be purchased and exported to India with the permission of the Government of Afghanistan. This proviso also applies to arms and ammunition so long as the British Government is assured that the intentions of the Government of Afghanistan are friendly. It is further laid down that no customs duties shall be levied at British-Indian ports on goods imported as above, on behalf of the Government of Afghanistan, provided that certain safeguards are complied with.

The British Government also agrees to the grant in respect of all trade goods imported into India at British ports for re-export to Afghanistan and exported to Afghanistan by routes to be agreed upon between the two Governments, of a rebate at the time and place of export of the full amount of customs duty levied upon such goods, provided that such goods shall be transported through India in sealed packages which shall not be opened or sub-divided before their export from India.

Major F. H. Humphrys was appointed British Minister to Afghanistan and arrived in Kabul on March 6th, 1922. An Italian Minister, with staff, which is understood to include at least one engineer, is also now established at the Afghan capital, while an American official representative from Persia visited Afghanistan recently in order to consider the desirability of establishing an American Legation. In the meantime, a small Indian Customs Mission is visiting Kabul in order to draw up regulations governing the export and import of goods at the frontier.

These events mark a distinct step forward in our trade relations with Afghanistan, but progress is bound to be very slow. Afghanistan is a poor country with few and primitive means of communication, and in view of the political and commercial insecurity, British firms who may contemplate extending their interests in that direction should proceed with circumspection and would be well advised to consult with the Indian Section of the Department of Overseas Trade before committing themselves to any definite forward move.

CHAPTER II.

DETAILED EXAMINATION OF THE LEADING IMPORT TRADES WITH SPECIAL REFERENCE TO CHANGES IN THE CHARACTER, VOLUME AND ORIGIN OF THE IMPORTS DURING THE FISCAL YEAR, APRIL 1ST TO MARCH 31ST, 1921/22*.

MANUFACTURED AND MAINLY MANUFACTURED GOODS.

Cotton Textiles.—*Yarns.*—The main features of the year have been an increase in the quantity but, owing to falling prices,

* Unless otherwise stated, the statistics in this section are drawn from the publications of the Department of Statistics, Government of India. In view of the decision that all Indian statistics shall in future be given in rupees and not in sterling, and in view of the immense labour involved in converting into sterling, the lakh of rupees (Rs. 100,000 or approximately £6,000) has been taken as the usual unit. It is fully realised that this is not so convenient a unit as the £ sterling.

a diminution in the value of imported yarns. The principal quantitative increases are under the heads of 40's and counts above 40's grey yarns. Bleached yarns show an increase of 25 per cent. All types of coloured and mercerised spinnings (above 20's) show a falling-off. The following table shows the imports of grey yarns, arranged according to counts.

Count.	1920-21. lbs.	1921-22. lbs.
Nos. 1's to 10's	216,748	91,109
,, 11's to 20's	7,140,513	6,609,997
,, 21's to 30's	3,564,308	4,963,720
,, 31's to 40's	13,884,835	19,028,399
above 40's	4,092,082	8,059,325
Two-folds	3,183,418	4,973,791
Total imports	32,081,904	43,726,341

The subjoined table gives similar details of the imports of bleached, coloured and mercerised yarns.

Description.	1920-21. lbs.	1921-22. lbs.
Bleached yarns	2,039,675	2,520,470
Coloured 1's to 20's	233,756	260,183
,, 21's to 30's	625,390	493,371
,, 31's to 40's	8,957,567	7,705,232
,, above 40's	927,890	779,016
,, two-folds	1,060,387	772,451
Mercerised yarns	1,279,536	793,764
Unspecified descriptions	127,390	73,514
Grand total of all kinds of twist and yarn ...	47,333,495	57,124,342

It is satisfactory to observe that the United Kingdom has improved her position and now supplies 70 per cent. in weight and 76 per cent. in value of the total imports. Consignments from Japan have been reduced by one half, and Japan now furnishes 26 per cent. in weight and 20 per cent. in value. Imports from Switzerland have increased. The following table gives the details.

Country of origin.	1920-21.		1921-22.	
	Lbs.	Rs. (lakhs).	Lbs.	Rs. (lakhs).
United Kingdom	23,395,580	795	40,074,146	877
Switzerland	416,773	15	828,849	22
China (including Hong Kong).	2,734,187	37	64,600	1
Japan	20,122,799	490	14,915,009	226
Other Countries	664,156	21	1,241,738	25
Total imports ...	47,333,495	13,58	57,124,342	11,51

The production of the Indian mills as compared with the imports is clearly shown in the following statement.

Years.	Imports in lbs. (1,000).	Indian mills production in lbs. (1,000).
Annual average for the five years 1909-10 to 1913-14 ...	41,794	646,757
1920-21	47,333	660,003
1921-22	57,125	692,313

These figures show that the present imports of yarn are well above the pre-war quantities and that their relative expansion has been greater than that of the Indian mills. It should be borne in mind, however, that the Indian mills have suffered severely through depreciation of plant during the war and it is only during the past year or two that they have been able to secure their renewals. It is only to be anticipated, therefore, that the next few years will show a considerable increase in total output.

The following statement shows the imports of yarn from the United Kingdom and Japan respectively, side by side with the Indian mills production in 1921/22, arranged according to counts.

Cotton, twist and yarn.	Imports from the United Kingdom.	Imports from Japan.	Total Imports.	Indian Mill production.
	Lbs. (1,000).	Lbs. (1,000).	Lbs. (1,000).	Lbs. (1,000).
Nos. 1–20	1,766	4,863	6,961	469,370
„ 21–25	1,122	—	1,219	150,579
„ 26–30	2,891	1,311	4,238	52,583
„ 31–40	18,366	6,888	26,741	16,900
Above No. 40	8,568	253	8,882	2,389
Grey and coloured two-folds (doubles).	4,546	1,125	5,746	—
Unspecified descriptions and waste.	2,815	475	3,338	492
Total	40,074	14,915	57,125	692,313

In counts below 30's, it will be observed that the Indian mills monopolise the market. It is only when one comes to 40's and upwards that competition begins.

In Appendix III, page 151, will be found a table showing the total weight of each count of yarn spun in all India during the years 1919/20, 1920/21 and 1921/22, which shows that last year the greatest weight was spun in the following counts (in order

of importance) 20's, 24's, 11's, 22's, 12's, 21's, 10's, 16's, 14's and 30's.

For very many years the imports of cotton yarns into India have been duty-free and this was the position in 1921. In March, 1922, however, a duty of 5 per cent. was imposed to meet the urgent financial needs of the country. Considerable interest was taken in the debate and the case against the duty was ably taken up by the Madras members of the Legislative Assembly on behalf of the handloom weavers. According to Mr. Seshagiri Aiyar, there are six million people engaged in the handloom weaving industry in India, of which two million are to be found in the Madras Presidency. The imported yarns used by the industry are largely the finer spinnings of 40's and upwards. It has been estimated that of the 47 million pounds of yarn imported in 1920/21, only 3 million pounds were used by the mills, and the balance presumably was absorbed by the handlooms. The Member for Commerce and Industry put the Government's case for the duty very succinctly as follows :—

"I should always have opposed the placing of an import duty upon yarn had it not been for our financial exigencies. The production of yarn in India is about 700 million pounds per annum. The imports of yarn have never exceeded 50 million pounds per annum. (*Note.*—They reached 57 million pounds in 1921-22.) A certain part of these imports are high count yarns which do not compete in any way with the yarns produced by the Indian mills. The rest are yarns below 40s., and these yarns are imported from England or from Japan and compete only to a small extent with the yarn produced in India. But that yarn imported, though it is only a small proportion of the yarn used by the hand-loom industry, exercises an important function in that it helps to regulate the prices of Indian mill yarn. Last year I opposed the imposition on this ground of any duty on yarn. This year, as the House knows, we have a deficit of 34 crores of rupees. The hand-loom industry is, I am glad to say, flourishing, possibly owing to the non-co-operation campaign and the Khaddar campaign; and having regard to the very large deficit with which we are faced, I think myself that we are justified in placing this small impost upon imported yarn, an impost of only 5 per cent. It will yield us 50 lakhs of rupees (say £300,000), and having regard to all the circumstances of the case, I think that the House will see that we are justified, in spite of our pronouncements last year, in proposing this duty."

Piece Goods.—The following table shows the quantitative imports of the three main classes of piece goods for the past two years and the last pre-war year.

Year.	Grey (unbleached).	White (bleached).	Coloured, printed or dyed.
	million yards.	million yards.	million yards.
1913-14	1,534·2	793·3	831·8
1920-21	580·2	421·8	489·3
1921-22	635·6	306·2	138·3

It is interesting to compare the above yardage figures with the following table showing the *value* of the three main classes of piece goods during the same period.

Year.	Grey (unbleached).	White (bleached).	Coloured, printed or dyed.
	£	£	£
1913–14*	16,966,515	9,523,204	11,907,683
1920–21	26,452,009	21,895,015	34,568,395
1921–22*	15,100,782	8,445,515	5,062,592

The falling-off in the yardage imported during the year is primarily due to the enormous stocks of high-priced goods which were carried over from the previous period and which have prevented any real improvement. The Calcutta Import Trade Association review the year in the following terms :—

" There has been practically no active market for imported piece goods during the past year, largely on account of the heavy value and quantity of high priced goods, left over from the high rupee exchange period, which were mentioned in the last annual report as having produced a position of unprecedented depression of extreme gravity. This depression is still with us to-day (February, 1922), and it is not yet clear when definite relief will come. To add to the exceptional difficulties under which the piece-goods import trade has been labouring a heavy enhancement of customs duty was made in the early part of the year, and the crushing weight of the increase must have largely defeated its own intended object by strangling any little revival which might have been in sight, or possible, throughout the year. Non-co-operation activities have also restricted the free movement of commodities, and must also have forcibly prevented consumption of supplies in many districts, whilst during the last three months of the year Calcutta bazaar dealers refrained from forward purchases by an agreement now expired. During the year, costs have been reduced considerably on account of reduction in wages, lowering of freights, and other causes, and it is possible that a revival in trade generally may not be far distant. If a reduction could be made in the existing injurious and hampering duty, it would be to the benefit of the country, financially, as it would also be politically, by rendering it possible for cheaper clothing to be made available for the masses."

The reduction in sterling values is due—quite apart from the falling off in yardage—to lower c.i.f. prices and a fall in exchange from an average of 2*s.* to one of 1*s.* 4*d.*

The principal varieties of each of the three main classes and the quantity of each variety imported were :—

Total Imports of Piece Goods into India (in millions of yards).

Grey (unbleached).	1913–14 (pre-war year).	1920–21.	1921–22.
Dhutis, saris and scarves ...	806·1	291·2	383·4
Jaconets, madapollams, mulls, etc.	150·4	39·1	55·2
Longcloth and shirtings ...	545·4	181·9	129·4
Sheetings	·2	46·4	50·1
Drills and jeans	21·3	17·6	16·1
Other sorts	10·8	4·0	1·4
Total	1,534·2	580·2	635·6

* Converted at exchange of 1*s.* 4*d.* per rupee.

White (bleached).	1913–14 (pre-war year).	1920–21.	1921–22.
Dhutis, saris and scarves ...	104·3	35·7	31·9
Jaconets, madapollams, mulls, etc.	307·9	105·5	144·1
Longcloth and shirtings ...	115·3	108·5	48·2
Nainsooks	20 ·7	121·7	67·5
Drills and jeans	5·7	6·3	2·0
Checks, spots and stripes ...	16·1	8·9	1·5
Twills	8·3	13·4	3·4
Other sorts	31·0	21·8	7·6
Total	793·3	421·8	306·2

Coloured, printed or dyed.	1913–14 (pre-war year).	1920–21.	1921–22.
Dhutis, saris and scarves ...	115·2	42·4	21·1
Cambrics, etc....	113·6	54·3	17·7
Shirtings	152·6	71·6	25·0
Prints and chintz	209·7	114·7	28·7
Drills and jeans	30·0	19·3	9·6
Checks, spots and stripes ...	19·7	13·5	3·7
Twills	31·4	31·2	5·7
Other sorts	159·6	142·3	26·8
Total	831·8	489·3	138·3

The enormous reduction in printed, dyed and coloured woven goods until the imports last year were only one-sixth of those of the last pre-war year merits very careful consideration. While it is true that the reduced imports were in part due to the carry-over of heavy stocks of fancy cloths, notably prints, and also to the increased demand for grey and white goods due to the Ghandi campaign (which has also reduced the Bombay mill sales of woven coloured fabrics), the principal reason undoubtedly was the high relative cost of finished goods as compared with greys and whites. A correspondent of the " Manchester Guardian Commercial," in the issue of May 11th, 1922, puts the whole position very clearly when he states :—

" The vast populations of India and the East, who are the greatest consumers of cotton goods in the world, are very poor, and have their tastes dictated to them by the price of cloth. The cheapness of bleached and coloured goods before the war had placed the lowest qualities of these within reach of great numbers of people, and the trade in them was a steadily expanding one, which appeared likely to remain principally in the hands of Lancashire. Even in 1920, when prices were at their highest, printed and bleached goods remained relatively cheap compared with grey cloth, and at that time the general view was that this would pass more and more into the hands of the local millowners and the Japanese. Since that date, however, the high finishing charges have driven the consumer off the coloured and, to a smaller extent, off the bleached goods back on to the grey cloths. So great has been the decline in the cost of cloth that India has bought Lancashire grey cloth in large quantities at prices that have been able to compete with the Japanese and Indian made goods."

In the same article was included the following comparative table of Lancashire finishing costs in 1914 and at the present time :—

——	1914.	Highest Prices reached.	Increase over 1914.	To-day.	Increase over 1914.
	s. d.	*s. d.*	Per cent.	*s. d.*	Per cent.
(1) Bleaching Costs.					
High-quality shirting : 35 in. × 40 yds. ...	1 3	4 3¼	241	3 4	167
Low-quality shirting : 32 in. × 40 yds. ...	1 3½	5 5 5-16	321	3 11 1-16	204
White mulls : 53 in. × 20 yds. ...	0 7 3-16	1 11	220	1 6	150
Nainsooks : 42 in. × 20 yds. ...	0 4 5-16	1 1 13-16	220	0 10 13-16	151
White scarves : 42 × 6 yds. (per pair)	0 1 15-16	0 6	209	0 5 5-16	174
(2) Printing Costs.					
Printed sarries : Per yard	0 1 1-16	0 4⅛	288	0 3¾	253
Printed white ground : Per yard	0 0 17-32	0 2⅜	348	0 1⅛	253
Fancy shirtings : Per yard	0 0 15-16	0 4¼	353	0 2¾	193
(3) Dyeing Costs.					
Dyed goods, Para Rd. : Per lb.	0 2⅞	1 2	387	0 9	213
Dyed shirtings : Piece of 39 yds. ...	1 1	5 4	392	3 0	177
(4) Yarn Dyeing Costs.					
Average per lb. ...	0 2·6	1 0·65	387	0 8·5	227
(5) Cost of Packing.					
Packing material for superficial foot average for wood and tin cases.	0 2·29	1 0 43	443	0 6·40	179

I would most strongly impress upon the parties concerned in Lancashire the imperative need for reduced finishing costs if they are to retain their valuable Indian trade in prints, dyed and fancy woven coloured goods. It is significant that during 1921, when the imports of coloured goods from the United Kingdom declined from 448½ to 121½ million yards, those from Dutch ports increased from 7,613,297 yards to 7,637,829 yards.

The total reduction in coloured goods has been fairly even, spread over the three main classes, as the following details show :—

Description.	1920-21. Yards.	1921-22. Yards.
Printed goods	284,336,248	84,723,124
Dyed goods	133,856,686	34,858,081
Woven coloured goods	71,062,821	18,697,124
Total Imports	489,255,755	138,278,329
Fents of all descriptions ...	18,471,765	9,745,932

Sources of Imports.—(1) *Grey Goods.*

Origin.	1920–21.		1921–22.	
	Yards.	Rs. (lakhs).	Yards.	Rs. (lakhs).
United Kingdom ...	420,287,698	1,872	526,493,158	1,838
Japan	150,428,376	717	83,490,368	337
United States	8,444,797	51	21,197,038	75
Total Imports ...	580,208,403	2,645	635,608,133	2,265

The United Kingdom has maintained its position fairly well in a very difficult year. The reduction in the imports from Japan by nearly one-half, notwithstanding the loud complaints made in Bombay with regard to Japanese dumping, is noteworthy, and shows that Lancashire can hold its own, even in grey goods, when prices become normal. The only reason I can adduce for the considerable increase in the imports from America is that the coarse, unsized sheetings and drills made by the mills in the Southern States approximate to the hand-spun and hand-woven "Khaddar" cloth more closely than either the British or Japanese productions.

(2) *Bleached Goods.*

Origin.	1920–21.		1921–22.	
	Yards.	Rs. (lakhs).	Yards.	Rs. (lakhs).
United Kingdom ...	408,560,383	2,088	299,339,523	1,227
Netherlands	5,839,025	40	4,390,956	27
Japan	3,819,617	22	1,860,766	9
Total Imports ...	421,784,132	2,189	306,166,654	1,267

Reduced prices account for the heavier relative fall in values than in quantities. There are no special features of interest.

(3) *Coloured Goods.*

Origin.	1920–21.		1921–22.	
	Yards.	Rs. (lakhs).	Yards.	Rs. (lakhs).
United Kingdom ...	448,598,019	3,054	121,559,458	648
Netherlands	7,613,297	79	7,637,829	53
Belgium	2,795,106	53	239,243	3
Switzerland	1,861,223	25	584,405	7
Italy	9,757,438	124	2,312,797	18
Japan	16,074,955	97	4,924.076	21
Total Imports ...	489,255,755	3,457	138,278,329	759

The sale of coloured goods has been affected by the non-co-operation campaign of Mr. Ghandi which set the fashion for the plainer greys and whites. Moreover, 1921 was not a lucky year for Indian marriages and this tended to lessen the demand. Large quantities of undelivered fancies of all descriptions were also carried over from the previous year, and, as already stated, the replacing costs in Europe were abnormally high. All these factors contributed to bring about the decrease in the total imports. Holland was the only supplier which maintained its position, and it is significant that, although Dutch shipments increased by over 24,000 yards, the values were reduced by 26 lakhs—a clear proof of the heavy fall in prices. The British share of the trade fell from 88 to 85 per cent. Belgian competition was virtually eliminated, while Italian and Japanese shipments declined in like proportion to those from the United Kingdom.

Japanese Competition.—The chequered progress of Japanese competition in the Indian piece goods market is clearly shown in the following table showing the percentage share of the United Kingdom and Japan in the trade, both pre-war and during the past two years :—

——	1913–14.		1920–21.		1921–22.	
	United Kingdom.	Japan.	United Kingdom.	Japan.	United Kingdom.	Japan.
Cotton, piece-goods grey ...	98·8	·5	72·4	25·9	82·8	13·1
„ „ white	98·5	—	96·9	·9	97·7	·6
„ „ coloured	92·6	·2	91·8	3·3	88·0	3·5

Shares of Principal Competitors.—The percentage shares of the four principal competitors in the total quantities of piece goods imported were as follows :—

——	1913–14.	1920–21.	1921–22.
United Kingdom	97·1	85·6	87·7
Japan	·3	11·3	8·3
United States	·3	·9	1·9
Holland	·8	·9	1·1
Other Countries	1·5	1·3	1·0
Total	100·0	100·0	100·0

Indian Mill Competition.—In my previous reports I have dealt at some length with the various aspects of Indian mill competition. The past year, however, has brought no new features to the fore and has been a period of great prosperity for the mills, the total production of which advanced from 1,581

million yards to 1,732 million yards—*i.e.*, approximately 9 per cent. The following detailed statement gives the quantity (in pounds and their equivalent in yards) and a description of the woven goods produced in Indian mills during the past two years :—

Description.		Twelve Months, April to March.	
		1920–21.	1921–22.
Grey and bleached piece-goods—			
Chadars	pounds	19,840,755	19,711,831
	yards	59,194,229	59,427,570
Dhutis	pounds	73,684,657	96,157,269
	yards	340,127,529	455,637,412
Drills and jeans ...	pounds	19,722,448	15,376,174
	yards	74,304,517	60,452,112
Cambrics and lawns	pounds	1,218,529	1,292,216
	yards	5,950,625	7,347,252
Printers	pounds	6,305,664	8,038,364
	yards	28,284,090	35,621,739
Shirtings and long-cloth	pounds	101,138,033	109,974,144
	yards	456,239,812	487,034,384
T-cloth, domestics, and sheetings ...	pounds	21,293,143	19,116,755
	yards	97,387,839	84,116,684
Tent cloth	pounds	3,772,426	3,246,909
	yards	7,507,785	7,255,084
Other sorts... ...	pounds	16,588,827	27,122,681
	yards	60,886,142	87,859,466
Total	pounds	263,564,482	300,036,343
	yards	1,129,882,568	1,284,751,703
Coloured piece-goods ...	pounds	98,387,636	98,432,961
	yards	450,967,178	446,821,593
Grey and coloured goods, other than piece-goods	pounds	3,484,852	3,052,986
	dozens	707,449	629,375
Hosiery	pounds	410,784	363,099
	dozens	117,249	115,081
Miscellaneous... ...	pounds	1,407,508	1,432,958
Cotton goods mixed with silk or wool ...	"	226,529	177,750
GRAND TOTAL ...	"	367,481,791	403,496,097
	yards	1,580,849,746	1,731,573,296
	dozens	824,698	744,456

In the plain goods section the greatest progress has been made in dhooties, which increased during the year from 340 to 455 million yards. The production of shirtings and long cloths also advanced from 456 to 487 million yards. Both of these are well established Lancashire trades and fall within the area of competition. Drills and jeans compete more particularly with Japanese and American qualities and the output of chadars and T-cloths tends to decline. The steady decline in the total Indian production of coloured goods during the past three years calls for comment. During the War the production of these goods increased by 54 per cent., and dyeing and finishing plants were ordered by a great

number of the mills. At the present moment most of the dye-houses attached to the Bombay mills are either closed or are working short time, largely on account of the change in fashion towards grey and bleached goods as a result of the political agitation. This, however, can only be a temporary phase, and all the tendencies point to a considerable extension of bleaching, dyeing, and even printing in India. It has been proved that bleaching and dyeing can be carried out satisfactorily and experts consider that there are no insuperable obstacles to the establishment of a calico-printing industry.

Goods Calendered in Indian Mills.—The statement below shows the quantity of cotton goods calendered and the proportion thereof to the total production in Indian mills in the twelve months, April, 1921, to March, 1922, compared with the corresponding period of 1920-21. In the twelve months, April, 1921, to March, 1922, the total quantity calendered was 254 million lbs. as against 221 million lbs. in the same months of the preceding year, an increase of 14·7 per cent. :—

	1921-22. Twelve months, April to March.	1920-21. Twelve months, April to March.
BRITISH INDIA—		
Quantity calendered lbs.	251,525,314	219,999,339
Ratio of calendered goods to production per cent.	67·2	64·83
INDIAN STATES (excluding Hyderabad)—		
Quantity calendered lbs.	2,341,003	1,320,968
Ratio of calendered goods to production per cent.	11·6	6·9
TOTAL INDIA (excluding Hyderabad)—		
Quantity calendered lbs.	253,866,327	221,320,307
*Ratio of calendered goods to production per cent.	64·4	61·72

Raw Cotton.—The tendency towards the production of finer cloths in India is further evidenced by the increase in the imports of raw cotton of the American and Egyptian types. The figures are as follows :—

Country of origin.	1920–21.		1921–22.	
	tons.	Rs. (lakhs).	tons.	Rs. (lakhs).
United Kingdom ...	5,259	74	12,402	151
Persia	266	2	401	3
Zanzibar and Pemba	160	3	453	8
Kenya Colony ...	2,797	76	9,202	154
U.S.A....	—	—	405	7
Other Countries ...	832	14	1,587	21
Total	9,314	169	24,450	344

The imports from the United Kingdom represent, of course, American cotton purchased in the Liverpool market, while those from Kenya Colony consist mainly of Uganda cotton of the Egyptian type. There are two or three strong Bombay companies trading with East Africa and the proportion of the Uganda crop consumed by India is likely to grow. The average value per pound of the imports from the United Kingdom was 8¼ annas, while the East African cotton averages 12 annas per pound.

The following statement (taken from the Indian Trade Journal) gives the figures of the Indian cotton crop for the years 1920 and 1921. The figures represent thousands of bales of 400 lbs. each :—

Approximate Crop.

	Year ending 31st August. 1921.	1920.
Exports to United Kingdom	38	149
,, to Continent	214	364
,, to Far East	1,465	1,796
,, to other countries	509	393
Total ...	2,226	2,702
Home Consumption—		
Mills	2,078	1,913
Extra factory or local	750	750
Total ...	2,828	2,663
Grand Total ...	5,054	5,365
Less imports	113	22
Approximate crop	4,941	5,343
Estimated in forecast	3,601	5,796
Excess (+) or deficit (−)	+1,340	−453
(Neglecting "carry over")	or 37·2 per cent.	or 7·8 per cent.

Further particulars with regard to the Indian mill industry will be found in Chapter V, page 113. The profits of the Bombay mills in 1920/21 were estimated by the then President of the Bombay Millowners' Association to be 16 crores (which, at the exchange then ruling, was the equivalent of over £16,000,000).

The Indian Tariff on Cotton Goods.—I have already quoted the opinion of the Calcutta Import Trade Association on the effects of the raising of the duties on piece goods to 11 per cent. in March, 1921. It is somewhat difficult, however, accurately to assess the effects of the new tariff, as the imports would have been reduced in any case owing to the heavy stocks in India and the unprecedented depression. Competent authorities, however, hold the opinion that a tariff of 10 per cent. or over is bound to have a restrictive effect on imports, particularly during periods of high prices. In the budget proposals introduced by the Finance Member on March 1st, 1922, the Government of India proposed to raise the import duty from 11 to 15 per cent. and the excise duty on Indian mill-made cloth from 3½ to 7 per cent. The Legislative Assembly, however, by a majority of 17, negatived the proposal to increase the excise and the following day voted against the increase in the import duties. The position remains therefore exactly as in 1921. The debate is most illuminating in showing the intense feeling in Indian political circles and the capacity of the Assembly for debating complex economic issues. It therefore deserves close study by Lancashire interests.

Judging by the bulk of the evidence given by Bombay mill-owners the general opinion seems to be that, while they favour protection in principle, even they have not the temerity to ask for further protection for themselves. My personal opinion is that if Lancashire interests will only accept the present position as a *fait accompli*, which is inevitable in view of the state of India's finances and of the growing control of the Legislative Assembly over financial and fiscal policy, and if they will refrain from making representations and speeches which simply irritate Indian feeling on the subject and goad the Assembly into taking further measures, then, to my mind, there is no reason why there should be any further increase in the duties and why the import trade and the mill trade should not progress side by side without friction and to the ultimate benefit of the great mass of the consumers in this country.

The Recent Boycott of Imported Piece Goods.—The recovery of the trade during the year 1921 was greatly handicapped by the action of the non-co-operation party in calling for a boycott of all imported cloths and the wearing of hand-spun and hand-woven "Khaddar" cloth from August 1st, 1921. Picketing on an extensive scale was resorted to in the main consuming centres throughout India and the results have been a reduction in the clearances of imported goods, a stimulation of the demand for mill goods (the supply of "Khaddar" being inadequate to meet the demand) and the deferring of forward orders as a result of agreements made by Indian merchants not to place indents abroad for a given period of time.

Economic factors, however, have been too strong for a purely political and sentimental movement of this kind ever to succeed. The fact that imported goods constituted over 50 per cent. of India's total consumption of piece goods before the war, and even in the year 1920-21 represented 30 per cent., and that some 75 per cent. of these imported goods are non-competitive and are not as yet made in India, renders an effective boycott of imported goods, in the long run, impossible. Moreover, very strong Indian vested interests have been built up in the distribution of imported fabrics and these merchants of all races and creeds are not likely to allow their livelihood to be sacrificed for an ideal, which most of them realise to be impracticable. Consequently the boycott, although still affecting deliveries in some quarters, has largely spent itself, and in a year or so's time will probably have faded into the limbo of forgotten things.

Reply to the Boycott Movement.—The most effective reply to the boycott movement is contained in a lucid note on the Indian Piece Goods Trade prepared by Mr. A. C. Coubrough, C.B.E., the manager in India of Messrs. Mather and Platt, Ltd., which was published by order of the Government of India.

I therefore venture to reproduce with acknowledgments to the author two of Mr. Coubrough's diagrams together with extracts illustrating the conclusions which he bases upon them. Diagram No. I shows the following particulars regarding the quantities of cotton piece goods placed on the Indian market during each of the twelve years 1909-10 to 1920-21 : (A) the quantity produced in Indian mills and retained or sold on the Indian market, (B) the quantity produced by Indian hand-loom weavers, (C) the quantity of retained imports, and (D) the total obtained by adding together (A), (B) and (C). Number II shows the value, in rupees, of the cotton piece goods supplied to the Indian market : (E) from Indian mills, (F) from hand-loom weavers, (G) imported, and (H) total.

Mr. Coubrough, in his report, draws a number of interesting conclusions from his study of these diagrams. Dealing with No. I he states :—

" The year 1909-10 was a year of low consumption; this is proved by prolonging the curve over a still earlier period of years not shown on this sheet. The year 1913-14 was a boom year. The average pre-war consumption may be taken as 480 crores of yards. The war caused a steady fall in consumption from the year 1913-14 till the year 1919-20, when a low point of 300 crores of yards was reached. The average consumption during these six years was about 400 crores of yards, or 80 crores of yards below the pre-war normal. The total shortage caused by the war was, therefore, 480 crores of yards, or one year's normal pre-war supply. Since the Armistice the consumption fell for 18 months but rose considerably in the last year under review.

" It will be noted that, except during the war period, hand-loom production kept pace almost uniformly with mill production and tended in

the years following, with the exception of the famine year 1919-20, to maintain its position in this respect.

" In regard to Indian mill-made goods, it will be noted that during the war there was a marked increase in production, but that this increase took place suddenly, soon after the start of the war, and did not maintain its upward tendency. The reason for this is fairly obvious. During the war the import of new machinery was practically at a standstill; the Indian mills could, therefore, only increase production to the maximum capacity of their existing spindles and looms. It is significant to record that, whereas the number of looms in Indian mills only increased by 15 per cent. between 1914 and 1920, the increase in production of woven goods in Indian mills increased during the same period by 46 per cent."

Turning to the value of the piece goods supplied to the Indian market, as shown in diagram No. II, Mr. Coubrough says :—

" It will be noted that the total value of imported piece goods rose from a figure of about 33 crores in 1909-10 to about 56 crores in 1913-14. The average pre-war expenditure on imported piece goods may be taken at a figure of about 44 crores of rupees. During the early years of the war the total value of imported piece goods dropped, but only to a comparatively small extent, below the normal.

" Up till the year 1919-20 it will be seen that the average amount spent on imported piece goods was practically the same as during pre-war years. Now this fact is most interesting when one compares the curve showing these increases (Curve G, Diagram II) with that showing the very rapid falling off in quantity of piece goods during the war period (Curve C, Diagram I). It indicates that the importing merchants in India are able to dispose of imported piece goods to a certain annual value, viz., an amount of about 44 crores of rupees, and that when the price of imported piece goods rose the consumption fell off practically in proportion to the rise in price.

" The figures for 1920-21 show a remarkable variation from normal. During that year India was committed to an expenditure of 80 crores of rupees in place of an expenditure during the previous year of 46 crores of rupees. The words ' committed to an expenditure ' have been purposely used, for, as a matter of fact, this expenditure was not actually incurred. The quantity of piece goods contracted for during this year, viz., about 140 crores of yards, was duly imported, but, as is well known, large quantities of these imports are still lying in Indian ports.

" The reason for the very rapid Curve G is to be found in the fall in the value of the rupee during the year we are considering, and the reason for the equally sudden rise in the quantity of piece goods imported is, doubtless, due to the fact that, owing to the high exchange value of the rupee, a much larger quantity of goods was apparently purchasable in that year for the same total expenditure. What actually happened was that Indian merchants arranged to buy piece goods for which they expected to pay in the neighbourhood of 50 crores. Their contracts, however, were in sterling, and, owing to the fall in the value of the rupee, the equivalent in rupees of the sterling price of the goods, in place of being in the neighbourhood of 50 crores, was found to be 80 crores.

" Now, judging by the very large and almost steady increase of the value of piece goods which India was capable of purchasing from the year 1909-10 onwards, it would seem that the difficulty in disposing of imported piece goods to the value of 80 crores was not due to the inability of India to spend this 80 crores, but purely to conditions of contract which made it difficult for the Indian merchants to dispose of these goods at a profitable figure."

Diagram Number I.

" Curve A shows the nett consumption in India of piece goods produced in Indian mills. The yearly figures are obtained by deducting the exports of Indian piece goods from the figures of total production as given in the Statistics of Cotton Spinning and Weaving in Indian mills published monthly by the Department of Statistics."

" Curve B.—The data for this curve was obtained by estimating the amount of cotton yarn consumed by hand-loom weavers and from this, on the assumption that four yards of cloth were on the average produced per lb. of yarn, the quantity of cloth produced was calculated. The quantity of yarn consumed by hand-loom weavers was estimated by adding together the quantity of imported and home produced yarn, and deducting therefrom the quantity exported and the quantity consumed by Indian mills. The remainder it is assumed is consumed by the Indian hand-loom weavers."

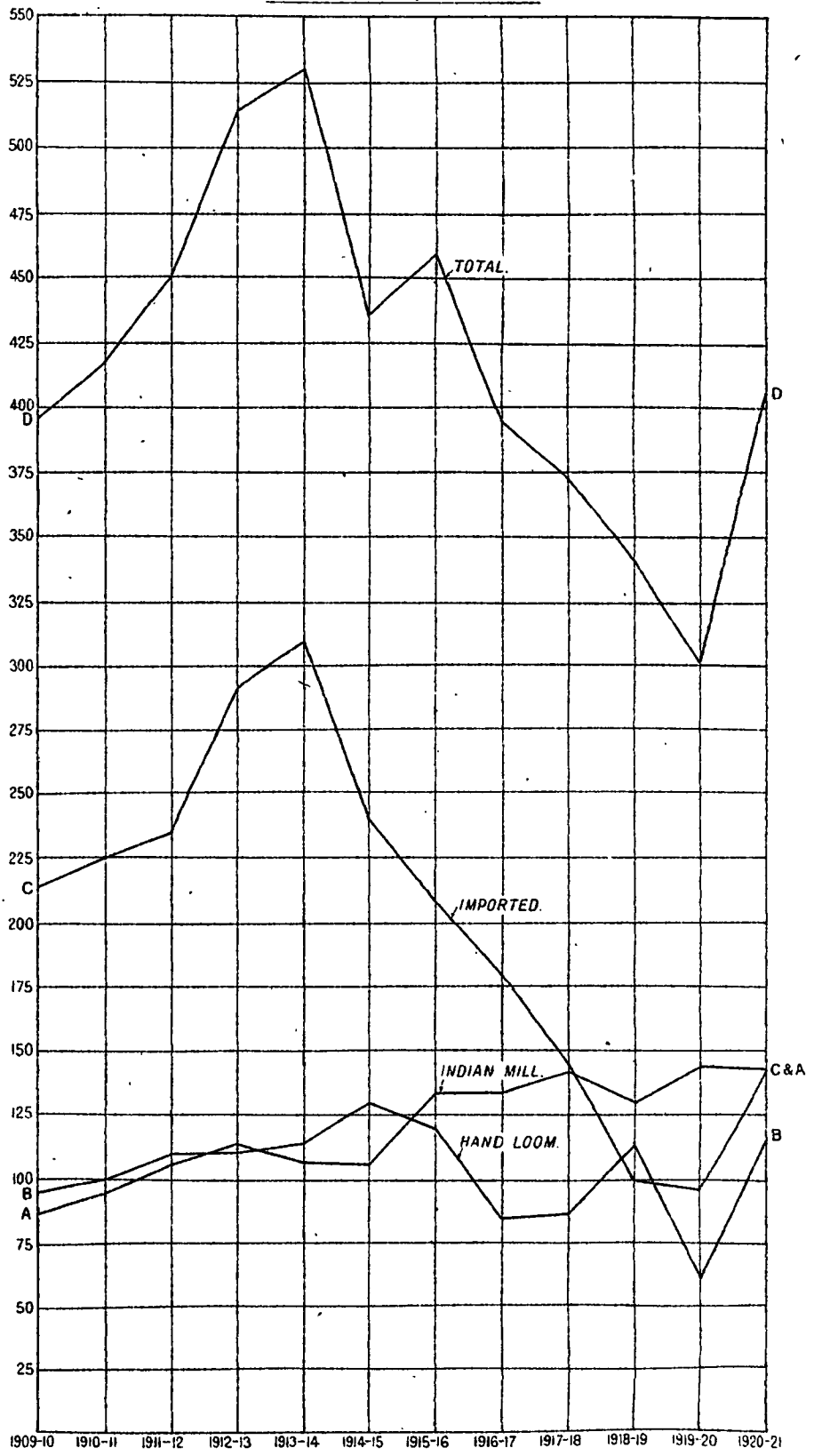
" In connection with this figure it may be pointed out that the whole of the yarn which goes into consumption in India, other than that which the mills consume, does not go to the making of piece goods, but the amount which is otherwise used has been estimated on good authority to be not more than 10 per cent. of the total, and against this reduction has to be placed the increase due to the use of hand-spun yarn."

" Curve C shows the nett consumption in crores of yards of imported piece goods. The figures for the yearly nett consumption are obtained by deducting the re-exports of piece goods from the total imports as given in the Accounts Relating to the Sea-Borne Trade and Navigation of British India."

" Curve D is the sum of curves A, B, and C, and represents the total annual consumption of cotton piece goods in India.

COTTON PIECE GOODS IN INDIA.

DIAGRAM I QUANTITIES.



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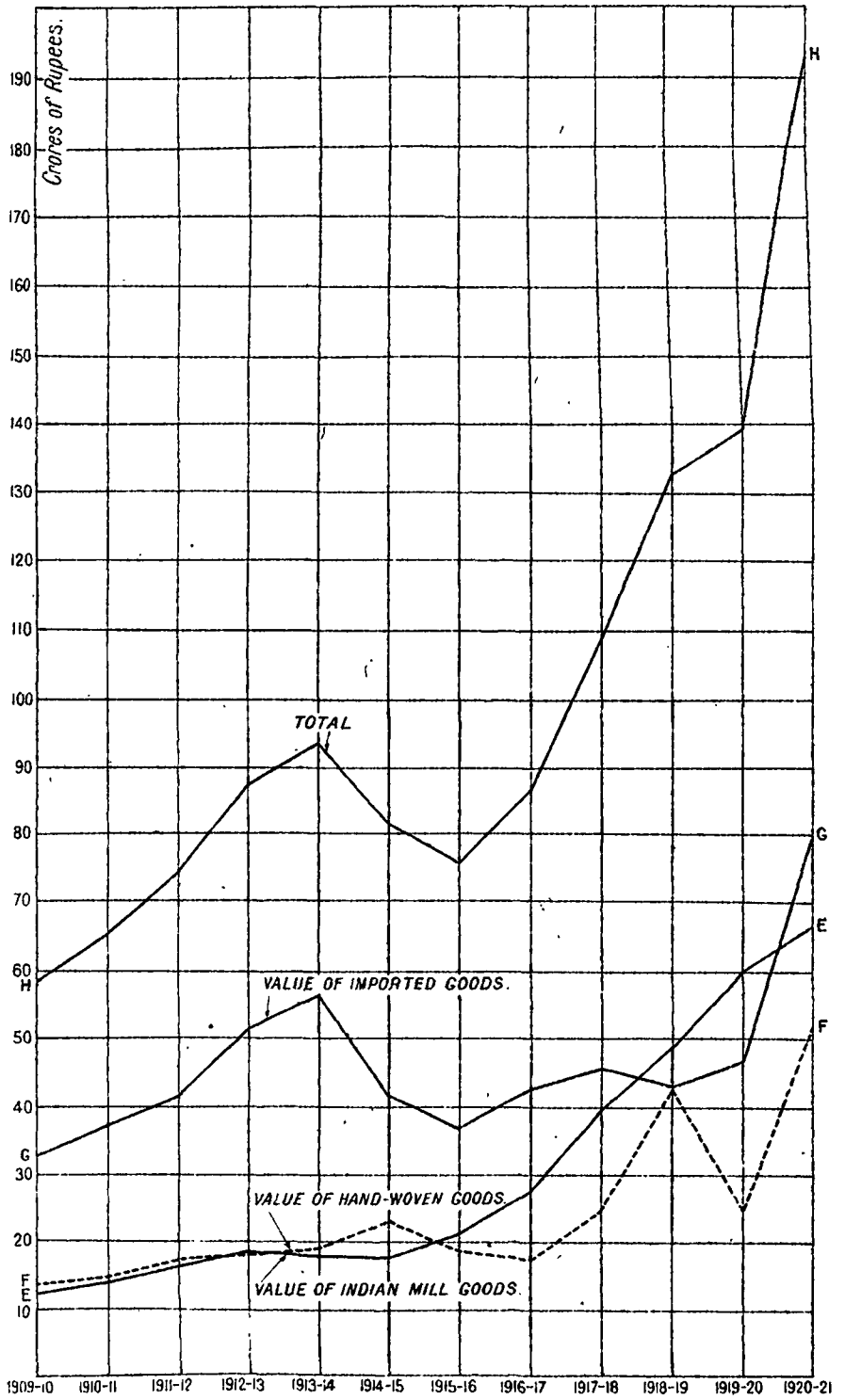
COTTON PIECE GOODS IN INDIA.

DIAGRAM II VALUES.



Malby & Sons, Lith.

Diagram Number II.

" Curve E shows the total value of Indian mill-produced goods consumed in India. The figures in this curve are obtained by multiplying the total quantity of mill-produced goods consumed in India as shown in curve A, diagram I, by an estimated average annual value of such goods. This estimated annual value is based on the assumption that " the true value of these goods bears a fairly close relationship to the value of imports, and is in general higher than the value based on the amount of excise duty realised."

" Curve F shows the total value of hand-woven goods consumed in India. The figures are arrived at by assuming that the value per yard of such goods is the same as the value of mill-produced goods."

" Curve G shows the total value of imported piece goods used in India. The figures on which this curve is based are obtained from the official returns of the sea-borne trade—import and re-export returns."

" Curve H is the sum of the three curves E, F and G, and shows the total amount, in crores of rupees, which India spends annually on piece goods."

The Position of the Trade in June, 1922.—A steady all-round improvement has been the principal feature of the past two months. The huge stocks of uncleared goods, most of them on account of defaulting dealers, are now being slowly cleared, and even in Bombay, Delhi and Amritsar, where three months ago it was impossible to effect any sales, stocks are now moving, though in many cases at prices which show losses to shippers of as much as 40 to 50 per cent. Further losses remain to be faced before the enormous number of repudiated and overdue drafts, which, early in 1921, are estimated to have reached the stupendous total of £30,000,000, are cleared off. This great incubus has been steadily but slowly reduced, and the most hopeful feature—after a period of twelve months of utter stagnation—is that goods are at last moving into consumption.

There are many hopeful factors in sight. The last wheat crop in Upper India was a good one, grain prices have fallen, and although there has been a tightness of money in the Delhi market, due in a great measure to speculation in grain, there is undoubtedly a greater disposition to purchase cloth. A much easier political feeling has been noticeable throughout India since the end of March and the boycott movement is steadily losing ground. The country districts are almost denuded of cloth, and up country merchants have deferred purchases for so long that the time is imminent when they will be forced to buy. That they cannot pay the prices of 1919-20 is evident from the fact that sales of goods imported at the top of the Manchester market with an exchange of 2*s*. and over are showing losses of 50 per cent. If the present monsoon is a good one, following upon favourable summer and

winter rains last year, then it is reasonable to hope that buying on a more normal scale will result, and it may well be that stocks at present in the country will be cleared before the end of the year. It would appear that this view is being taken by the large importers in the ports, as purchases on a considerable scale for Calcutta and Bombay, and to a lesser extent Karachi and Madras, have been made on the Manchester Exchange during the past few weeks. India seems to have come into the market this year at the right moment, and those who were first in the field secured considerable quantities of goods at cost price or even below in view of the fact that makers wished to keep their looms going. Home prices have since stiffened, but, even now, would appear to be on a level which India can pay if only local conditions continue as they promise to do and there are no more political upheavals. The first monsoon forecast, issued by the Indian Meteorological Department on June 8th, is favourable, and it is safe to say that at no date during the past twelve months could one have written with the same hopefulness as it is possible to do at the present time. Unless any unforeseen event happens, I think that a steady improvement in the situation should take place during the next year. It is to be hoped that this improvement will be gradual, as anything in the form of a boom would probably result in a reaction which would set back that steady progress which is so urgently required by both shippers and importers alike.

Cotton Sewing Thread.—The imports during the year fell away by one-third in quantity. The statistics were as follows :—

Origin.	1920–21.		1921–22.	
	lbs.	Rs. (lakhs).	lbs.	Rs. (lakhs).
United Kingdom ...	1,310,720	85	949,233	70·5
Japan	41,396	1	32,782	·5
Other Countries ...	144,010	5	21,664	1
Total	1,496,126	91	1,003,679	72·0

British spinners have a strong hold on the Indian market, and their distributing methods leave little to be desired. Japanese competition, which became insistent during the War, has now subsided and dealers are quite satisfied to revert to their old suppliers.

Flax Manufactures.—The main types imported were as follows :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Twist and yarn	—	—
Canvas	39	16
Piecegoods	5	2
Sewing thread	5	3
Other sorts, including bags and sacks	11	9
Total	60	30

The imports of twist and yarn are negligible, amounting only to Rs.61,000 in 1920-21, and Rs.25,000 in 1921-22. Detailed statistics are not available as to the provenance of the imports. Before the War, the United Kingdom supplied almost the whole of the imports, but Japanese competition was met with during the War, and in 1919-20 Japan supplied one-fourth of the canvas imported. The imports of sewing thread are predominantly British.

Jute Manufactures.—Strange as it may seem, there is still a certain import of the finer qualities of jute canvas and gunny bags. The trade, however, is a declining one, as the mills on the Hooghly are constantly weaving finer and finer fabrics.

The provenance of the imports during the past two years was as follows :—

Principal Sources of Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	16	8
Ceylon	8	10
Japan	1	—
Total imports ...	26	20

Silk Manufactures.—This is a very valuable trade but is not one which concerns the British manufacturer to any extent, as the bulk of the demand is for Oriental fabrics, which are supplied by China and Japan. The imports of the various types were as follows :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Silk yarns, noils and warps	82	44
Goods of silk mixed with other materials	51	16
Silk piece goods	411	232
Sewing thread	1	·5
Other kinds	14	6
Total imports ...	559	298·5

Of the yarns, noils and warps, 40 per cent. were obtained from Japan and the balance from China and Italy.

Silk Mixtures.—The trade in silk mixtures is the only one in which British makers have any appreciable interest. The imports of mixtures were drawn as follows :—

Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	10	5
Germany	16	2
France	8	3
Italy	11	5
Other countries	7	1
Total ...	52	16

Silk Piece Goods.—The imports of silk piece goods are on a large scale as they are particularly suited, on account of their light weight, coolness and durability, for wear in a hot climate such as India. The imports were derived as follows :—

Country of Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	11	4
France	5	2
China (including Hong Kong)	165	101
Japan	220	122
Other countries	10	4
Total ...	411	233

Switzerland and the Straits Settlements supply small quantities. The principal port of entry is Bombay. The imports consist, in the main, of light pongee's for men's wear. The average value per yard imported last year was Rs. 1/8. The classing of silk piece goods under the " luxury " heading of the tariff with a duty of 30 per cent. *ad valorem* is likely to restrict the imports to some extent.

Woollen Manufactures.—The various types imported were as follows :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Yarns and knitting wool	25	19
Blankets	6	2
Braids	·68	·62
Carpets and rugs	20	12
Hosiery	32	5
Piece goods	461	79
Shawls	1	2
Other sorts	7	4
Total imports ...	552·68	123·62

Half the imports of woollens are imported *viâ* Bombay for the Punjab, United Provinces and Upper India generally. Karachi also does a large trade with the Punjab, Afghanistan, Baluchistan and North-West Frontier Province. These are the parts of India which enjoy a cold winter climate. Fair quantities enter Rangoon for distribution in the hill tracts of Burma and in Western China.

Woollen Piece Goods.—Woollen piece goods constitute by far the most important item, and this is predominantly a Bradford trade. The figures are as follows :—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	412	63
Netherlands	9	1
France	11	7
Japan	20	1
Other countries	9	7
Total ...	461	79

The serious decline in the trade during the past year is almost entirely attributable to the very heavy stocks in Bombay, Karachi, Delhi and Amritsar. Although these stocks will probably be worked off during the coming autumn season, it is likely that the imports in 1922 will also be on a very small scale. It is satisfactory to note that Japanese competition, which became serious in the lower qualities during the war, is now almost eliminated. The Indian woollen mills in Cawnpore, Bombay and Dhariwal (Punjab) are beginning to compete even in the finer serges, &c.

Woollen Shawls.—The trade in imported cashmere shawls has never been a British trade. Before the war, Germany and Austria supplied the bulk of India's requirements, and the following statistics show that Germany is regaining her position :—

Origin.	1920-21.		1921-22.	
	Number.	Value (Rs.).	Number.	Value (Rs.).
United Kingdom ...	11,622	76,188	2,666	22,388
Other countries ...	4,650	42,088	41,471	146,078
Total	16,272	118,276	44,137	168,466

Although imports from Germany are not separately classified, they form the greater portion of the shipments from other countries. Some idea of the character of the trade can be gained from the average value per shawl, which, last year was Rs. 3/8 (say, 4*s*. 8*d*.).

Carpets and Rugs.—The trade before the war was worth £150,000, of which the United Kingdom supplied £99,000. Imports, however, have not attained to pre-war values, and there was a considerable shrinkage in imports during the past year :—

Principal Countries of Consignment.	1920-21. Rupees.	1921-22. Rupees.
United Kingdom	13,26,758	5,52,563
Belgium	66,819	2,223
France	53,090	25,385
Asiatic Turkey (including Mesopotamia) ...	67,327	1,23,987
Persia	4,09,519	4,36,753
Other countries	83,211	33,787
Total ...	20,06,724	11,74,698

British manufacturers continue to hold the market in the good quality carpets for the European and the best Indian demand. The trade, however, is not capable of great expansion as the European population of the country is not likely to increase very much and the Indian factories at Agra, Mirzapur, Amritsar and in

Kashmir are improving their productions and methods of distribution. Moreover, the climate in the plains is such that the usual requirements of a bungalow are met by the use of Indian-made cotton dhurries. The imports from France and Belgium (and also from Germany before the war) consisted mainly of printed tapestry carpets for the bazaar demand. There is a fair trade in sealskin rugs, which is largely in British hands.

Machinery and Millwork.—The outstanding feature of the year has been the prodigious import of machinery of all kinds, and this item now takes third place in the import trade, being exceeded only by cotton textiles and sugar. The following table shows the origin of the imports of machinery and millwork during the past two years :—

Countries of consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	17,53	28,32
Germany	17	55
Switzerland	3	11
Japan	12	4
United States...	4,02	4,51
Other countries	50	72
Total ...	22,37	34,25

The following table shows the relative importance of the three principal suppliers both before the war and during the past two years :—

Country.	1913-14.	1920-21.	1921-22.
	Per cent.	Per cent.	Per cent.
United Kingdom	90·0	79	82·5
United States...	3·0	17	13
Germany	5·5	·75	1·5
Other Countries	1·5	3.25	3
	100·0	100·00	100·00

It is most satisfactory to note that, although the United Kingdom has not yet attained her pre-war position, she bids fair to do so in a few years' time and is recovering ground lost during the war in a remarkable way. Although American shipments have steadily declined in the aggregate, United States competition is still serious in many branches, such as electrical plant, sawmilling and woodworking machinery, agricultural machinery, machine tools and industrial plant of all kinds. Moreover, by dint of active representation on the spot she is obtaining a footing in very many lines which have hitherto been supplied by British makers. This question is treated at greater length in Chapters III. and IV. when dealing with the purchase of Government stores and methods

of representation respectively. The increase in the imports of German machinery consists principally of rice mills for Burma and a certain amount of oil mill and sugar machinery. The great advantage of the depreciated mark exchange which resulted in many orders being placed in Germany during the early part of 1921 is now offset by rising prices and uncertain deliveries.

The steady increase in the imports of machinery into India, which have more than trebled in value during the past three years, despite falling prices, is partly due to the renewals to plant which had depreciated during five years of war, but mainly to the important industrial revival in India which reached its apogee in the industrial boom of 1919. Although a setback has been experienced during the past year of world-wide depression, and there has been a pruning of the less sound concerns, the cotton and jute industries have taken very large quantities of plant which was ordered after the close of the war. In view of the number of sound industrial propositions which are merely awaiting a favourable money market before they are floated, it would appear that the Indian market for machinery and plant of all kinds is likely to expand still further, and I look forward to an increasing offtake of British machinery in the future.

The following table shows the principal types of machinery imported during the past two years :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Prime movers (other than electrical) ...	2,44	2,89
Electrical machinery	2,19	3,90
Boilers	1,59	2,55
Boot and shoe manufacturing machinery...	5	2
Leather tanning and curing machinery ...	8	6
Machine tools	1,38	84
Metal working machinery	17	40
Mining machinery	30	62
Oil crushing and refining machinery ...	8	55
Paper mill machinery	32	34
Refrigerating machinery	23	16
Rice and flour mill machinery	55	64
Saw mill and wood working machinery ...	18	29
Sewing and knitting machines, and parts thereof	68	29
Sugar machinery	18	88
Tea machinery	39	27
Textile machinery—		
Cotton—		
Spinning machinery	151	458
Weaving machinery	150	226
Bleaching and dyeing machinery ...	5	18
Printing machinery	—	—
Other sorts	60	62
Jute machinery	278	432
Shuttles (excluding those for sewing machines)	14	17
Other sorts	13	69
Typewriters	36	16
Typewriter parts and accessories	4	2
Other sorts of machinery	414	640

It is not yet possible to give detailed figures of the origin of the imports of each specific type of plant. The subjoined figures relating to electrical plant show that British makers are steadily improving their position :—

Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	149	296
United States of America	67	81
Other countries	3	13
Total ...	219	390

As usual, Bengal stood first among the provinces importing machinery, followed closely by Bombay and then Burma, Madras and Sind.

Iron and Steel.—During the past year, for the first time, iron and steel was displaced from its position and now takes fourth place in order of importance in the import trade, the total imports amounting to 21 crores of rupees. The year was a most difficult one for importers as prices fell continuously. Early in 1921 the f.o.b. price of British structural steel was £22-23 per ton, whilst at the end of the year it was below £9. Freights within the same period fell over 50 per cent. The lower rates of exchange that prevailed towards the end of 1921 in a small measure neutralised the fall in the f.o.b. price, but, generally speaking, the c.i.f. cost of iron and steel may be taken as having fallen 50 per cent. during the year. The Calcutta Import Trade Association, in their Annual Review of 1921, state that—

" The position of stockholders has been an unenviable one. In the earlier months of 1921, large shipments arrived, the indents for which were placed some months previously. In the interim the demand had fallen off. The principal consumers, Railways and Government Departments, (as a result of financial stringency), ceased buying except on a very limited scale. On account of the general trade depression, there was but little call for structural steel for new mills and other industrial concerns. The already difficult position of stockholders became aggravated by forced sales made by banks, and by large quantities of war material offered by the Indian Munitions Board. It is believed that substantial losses have been faced by most firms engaged in the metal side of the import trade.

" The coal strike that took place in Great Britain in April caused the business that was then offering to be diverted to the Continent. At the end of the year British makers showed a disposition to meet Continental competition, but, on account of the existing stocks in the different Indian ports and the absence of demand, no orders of any importance have been placed.

" The trade on the whole may be congratulated on having survived a very trying period. It is said that, on account of the failure of a number of bazaar importers to keep their engagements, there has been a strong reaction on the part of many British exporting houses, who have hitherto done direct business, against further dealing with the bazaar. This, however, is not likely to become a prominent issue until conditions again become normal."

Turning now to the statistical side, the following shows the sources of origin in pre-war and recent years.

Year.	From the United Kingdom.	From Germany.	From Belgium.	From United States of America.	From Japan.	From other countries.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1913-14	609,200	200,100	173,000	22,000	—	13,900	1,018,200
1919-20	269,300	900	13,200	134,500	2,200	6,800	426,900
1920-21	498,300	15,100	68,900	113,000	800	15,800	711,900

The statistics available for 1921-22 do not permit of classification in this way, so I propose to show the origin of the imports last year according to the class of iron and steel imported, which will be useful as showing where foreign competition is most serious.

Description.	From the U.K.	From U.S.A.	From Belgium.	From Germany.	Total Imports.
	Tons.	Tons.	Tons.	Tons.	Tons.
Iron—Bar and Channel ...	7,433	151	7,902	*	16,919
Iron or Steel—					
Beams, pillars, girders and bridgework.	21,720	2,357	*	*	58,037
Bolts and nuts	2,293	389	*	*	4,219
Hoops and strips	12,055	2,632	*	*	17,825
Nails, rivets and washers (other than wire nails).	3,470	143	1,367	876	7,117
Cast pipes and fittings ...	12,976	4,019	*	*	17,395
Galvanized sheets and plates	83,272	4,016	*	*	88,341
Tinned plates	24,207	535	*	*	24,747
Plates not galvanized or tinned..	26,802	1,907	16,010	14,733	61,056
Wrought tubes, pipes and fittings.	10,114	25,910	514	2,795	40,779
Wire nails	295	70	3,570	3,179	7,254
Steel bars and channel ...	17,616	12,803	73,124	19,770	136,704

* Not separately distinguished.

The total imports of iron and steel and manufactures thereof fell from 31 crores of rupees in 1920-21 to 21 crores in the year under review. This is principally due to the fact that the heavy purchases made at the close of the war were mainly shipped by the end of the first half of the year and buyers hesitated to undertake further commitments at a time of falling prices. While the United Kingdom and the United States have both been affected by the reduction of the trade, it is satisfactory to note that British shipments have not declined to the same extent as American. The most remarkable feature of the year has been the recovery by the Continent of its position in the Indian steel

trade. Belgian and German suppliers are largely regaining their pre-war position and the former now lead the way in the import trade in steel bars and channels. Dealing with the various articles in turn for 1921-22 as compared with the previous year and confining ourselves to quantities, which is the safest criterion, we find that in beams, pillars and bridgework the share of the United Kingdom and the United States of America each fell by two-thirds, while that of " other countries "—mainly Belgium and Germany—increased from 8,000 to nearly 34,000 tons. The total trade in bolts and nuts fell away by one half, and here again, while British and American supplies were heavily reduced, the Continent's share rose by nearly 1,000 tons. The trade in hoops and strips has hitherto been largely a British trade, but in the year under review British shipments fell from 19,000 to 12,000 tons, American from 3,746 to 2,632 tons, while other countries advanced from 635 to 3,138 tons. The total imports of nails, rivets and washers (other than wire nails) fell from 13,000 to 7,000 tons. British shipments were reduced from 7,450 to 3,470 tons, American from 1,022 to 143 tons, while Belgian supplies advanced from 719 to 1,367 tons and German from 110 to 876 tons. As regards cast pipes and fittings, the British share fell from 20,536 to 12,976 tons and the American from 4,288 to 4,019 tons in a total trade reduced from 25,116 to 17,395 tons.

The trade in galvanised sheets and plates has always been one of the most important items. In 1913-14 the total imports into India amounted to no less than 277,595 tons, of which the United Kingdom supplied 274,759. During the war the trade was reduced to very small proportions, but has since steadily increased from 58,000 tons in 1919-20 to 67,000 tons in 1920-21 and 88,000 tons in the year under review. Of this last total, the United Kingdom furnished 83,272 tons valued at over 3 crores of rupees, America 4,016 tons value 17 lakhs, and other countries 1,053 tons value 4 lakhs. British suppliers are steadily regaining their hold of this valuable trade. The imports of tinned plates fell from 49,934 to 24,747 tons, of which 24,207 tons were derived from the United Kingdom and 535 tons from the United States. Plain steel plates and sheets is a valuable item of import. The total trade fell from 98,791 tons to 61,056 tons. Supplies from the United Kingdom dropped from 67,000 to 27,000 tons and American shipments from 20,000 to 2,000 tons On the other hand, Belgian shipments increased from 7,588 tons to 16,010 tons and German supplies from 1,710 tons to 14,733 tons. In wrought tubes, pipes and fittings, the United States continues to maintain her predominant position. The total trade remained steady at 40,779 tons, of which 25,910 were drawn from America, 10,114 from the United Kingdom, 2,795 from Germany, and 1,034 from Holland. The trade in wire nails is now almost entirely a Continental trade. Of a total import of 7,254 tons, Germany supplied 3,179 tons and Belgium 3,570 tons. British

shipments only amounted to 295 tons. It is unfortunate that details are not yet available with regard to the sources of origin of imported wire rope. The total imports fell from 2,965 tons in 1920-21 to 2,145 tons in 1921-22, of which 619 tons was galvanised and 1,526 tons black wire rope.

Finally, we come to the large trade in bars and channels, of which, normally, steel bars account for over 96 per cent. The total trade fell from the relatively high level of 148,000 tons in 1920-21 to 136,704 tons, valued at 2·9 crores, in the year under review. The principal supplier was Belgium with 73,124 tons (53 per cent.); then Germany with 19,770 tons (14 per cent.); the United Kingdom, 17,616 tons (13 per cent.); United States, 12,803 tons (9 per cent.); and other countries 13,391 tons.

Railway Plant and Rolling Stock.—The imports were as follows :—

	1920-21.			1921-22.		
	Private.	Govt.	Total.	Private.	Govt.	Total.
	Rs. (lakhs)	Rs. (lakhs)	Rs. (lakhs)	Rs. (lakhs)	Rs. (lakhs)	Rs. (lakhs)
Carriages and wagons ...	6,54	1,00	7,54	8,90	1,51	10,41
Locomotive engines and tenders.	4,33	1,25	5,58	5,91	77	6,68
Bridge work	23	—	23	80	—	80
Rails, chairs, and fish plates of steel or iron.	1,29	8	1,37	1,50	5	1,55
Sleepers and keys of steel or iron.	78	—	78	92	1	93
Sleepers of wood	48	—	48	23	—	23
Other kinds	48	2	50	65	8	73
Total	14,13	2,35	16,48	18,91	2,42	21,33

Details are not yet available with regard to the origin of railway material imported on Government account, but it is safe to assume that at least 95 per cent. was obtained from the United Kingdom. The following table shows the source of the imports on private account.

Country of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	13,48	18,40
Canada	21	2
United States	22	13
Australia and New Zealand	12	20
Other Countries	10	16
Total Imports	14,13	18,91

The position of the United Kingdom in supplying 97 per cent. of the requirements of company-worked lines in India is eminently satisfactory and now that the Government of India are committed to a capital expenditure programme of 150 crores of rupees (say, £100,000,000) during the next five years it is practically certain that the imports will continue to expand. Competition, both from Indian and foreign sources, is likely to be much more serious in the future and this question is of such vital interest to British suppliers of railway rolling stock and plant that I am devoting special consideration to it in Chapter III, page 89, when treating of Government stores.

Motor Vehicles.—*Motor Cars.*—Number of motor cars imported :—

Year.	From United Kingdom.	From United States.	From Canada.	From France.	From Italy.	Total.
1913–14 (pre-war)	1,669	868	—	111	7	2,880
1920–21	2,541	10,120	1,938	192	218	15,432
1921–22	790	802	576	158	222	2,895

The last year has been a most difficult one in the motor trade. Very heavy stocks at high prices were brought over from the preceding year when a great deal of overtrading took place. Shipments were further checked by the heavy import duty of 20 per cent., which has been raised still further to 30 per cent. in the present financial year. There is little doubt that this high impost will tend to check the import of cars into India and it is feared that it will fall particularly heavily on the more expensive British cars and will bring their cost beyond the means of most buyers, thus tending to encourage the sale of the cheaper American car. While it will be seen from the above table that the United States shipments were greater in quantity than those from the United Kingdom, a study of the values shows that the United Kingdom led with 84 lakhs of rupees and the American shipments were only valued at 38 lakhs, showing conclusively that the average value of the British car is more than double that of the American. The imports from Canada consisted mainly of Ford cars, the Ford Company having allotted the Indian market to their Canadian factory. Calcutta headed the list of ports of entry with a total of 1,005 cars, Bombay 968, Madras 425, Rangoon 318 and Karachi 179.

The following statement shows the number of the various kinds of motor vehicles registered in the different provinces of British India up to 31st March, 1922 :—

Statement of Motor Vehicles Registered up to 31st March, 1922.

—	Motor Cars.	Motor cycles including Scooters.	Heavy Motor Lorries, &c.	Total.
Bengal	8,834	2,111	693	11,638
Madras City*	570	88	29	687
Madras Presidency	1,492	1,022	328	2,842
Delhi°	152	68	20	240
Central Provinces	933	506	34	1,473
Karachi	756	434	114	1,304
United Provinces	3,250	1,503	577	5,330
Bombay	7,430	1,893	642	9,965
Punjab	2,675	1,663	552	4,890
Bihar and Orissa†	1,758	507	126	2,391
Burma	3,915	1,734	347	5,996
Ajmer-Merwara	Not yet available.			
North-West Frontier Province*	110	93	20	223
Assam	340	110	23	473
Total‡	32,215	11,732	3,505	47,452

* Relates to financial year 1921–22.
† Relates to the period up to 31st December 1921.
‡ Excludes Ajmer-Merwara.

Motor Cycles.—Although there was a considerable falling-off in the trade, British makes held their own as against foreign competition, as the following figures show :—

Origin.	1920-21.		1921-22.	
	Number.	Rs.	Number.	Rs.
United Kingdom ...	3,744	40,03,992	542	6,95,630
United States... ...	1,236	11,87,394	97	1,27,020
Other Countries ...	199	1,58,624	95	64,533
Total Imports ...	5,179	53,50,010	734	8,87,183

Motor Lorries.—Imports fell from 2,885 vehicles valued at Rs.223 lakhs in 1920-1921, to 580 vehicles valued at Rs.29½ lakhs in the year under review. The progress of motor transport for goods in India is very slow, and although a few transport companies in the large ports are making great efforts and are doing valuable pioneer work, there is a great deal of conservatism to be overcome. A good beginning, however, has been made, and it is likely that when trade improves and money becomes available for extensions, we shall see a considerable expansion of motor transport both for passengers and goods.

Provisions.—The following table shows the value in lakhs of rupees of the imports of provisions into India during each of the past two years :—

Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	179	119
Netherlands	12	26
Straits Settlements	42	43
Australasia	22	21
Japan	3	2
United States	71	35
Imports from all sources ...	361	270

The most important articles imported are the following :—

Principal articles.	Average of 5 years 1909-10 to 1913-14.	1920-21.	1921-22.
	Cwts.	Cwts.	Cwts.
Farinaceous and patent foods ...	255,900	254,974	273,772
Canned and Bottled Provisions ...	86,100	134,325	80,826
Biscuits and Cakes	72,900	41,861	13,923
Milk (condensed and preserved), including Milk Cream.	103,300	61,759	81,536
Jams and Jellies	17,400	16,658	11,064
Bacon and Hams	14,500	8,216	10,136
Cocoa and Chocolate	4,600	7,154	3,482
Cheese	11,700	10,558	7,711

Although the total trade showed a considerable decline during the year, it is noteworthy that British supplies maintained their position, and that American shipments were reduced to a much greater extent. The trade is suffering from the increased import duties, which now amount to 15 per cent. on all general provisions, and 30 per cent. on confectionery. The large British trade in sweetmeats and confectionery is already being seriously curtailed and the enhanced duties give a strong protection to the few Indian factories which produce sweets. The leading British shippers will do well to consider the desirability of establishing depots and factories in India for the manufacture of those articles for which raw materials can be readily obtained.

Liquors.—*Ale, Beer, and Stout.*—The subjoined table shows the imports in lakhs of rupees during the past two years : —

Country of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	80	65
Netherlands	5	8
Japan	7	8
Other Countries	8	16
Total	100	97

Before the war, the United Kingdom supplied 86 per cent., her only serious competitor being Germany with 11 per cent. During the war, when British supplies were cut off, light Japanese beers invaded the market, but these have now been largely ousted. The outstanding feature of the past year has been the entry of German beers into India, the greater part of the imports under the heading "other countries" being of German origin.

Spirits.—The following table shows the quantity and value of the total imports of spirits during the past two years :—

Origin.	1920-21.		1921-22.	
	Gals. (1,000).	Rs. (lakhs).	Gals. (1,000).	Rs. (lakhs).
United Kingdom ...	1,063	203	708	159
France...	421	77	204	46
Java	572	11	438	10
United States... ...	35	12	20	9
Germany	4	1	20	3
Total Imports ...	2,223	316	1,478	235

The United Kingdom supplies practically the whole of the whisky imported, and France the greater portion of the brandy. Imports from Java consisted mainly of cheap rum, while American imports were largely of spirit present in drugs, medicines or chemicals and of perfumed spirit.

Wines.—The imports of wines declined heavily during the year, the figures being :—

1919-20	1920-21	1921-22
45 lakhs.	64 lakhs.	38 lakhs.

Paper and Pasteboard.—After a very great expansion in 1920-21 the total imports under this heading have fallen considerably.

1920-21	1921-22
Rs. (lakhs).	Rs. (lakhs).
730	234

Printing Paper.

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	116	23
Sweden	39	12
Norway	76	19
Germany	6	7
Belgium	9	4
United States	16	2
Imports from all sources ...	285	73

It is noteworthy that Japanese competition is now practically eliminated, the imports from Japan last year being Rs.38,860 American competition also is less insistent.

Writing Paper and Envelopes.—In this item, the United Kingdom has improved its relative position, although in a greatly reduced trade. Here again American competition, which at the close of the war was considerable, is now a minor factor. The imports were as follows :—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	111	32
Sweden	13	2
Norway	27	2
Germany	4	3
Japan	9	1
United States	29	2
Total imports ...	204	48

Packing Paper.—The imports declined by nearly two-thirds during the year.

Country of Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	16	9
Sweden	7	3
Norway	12	1
United States	9	1
Total imports ...	53	19

As I stated in my last report, the most effective competition which will have to be met in the future will be that from the Indian mills. The production of the Indian paper mills in 1920 amounted to 29,400 tons, as compared with 31,000 tons in 1919, and 31,400 tons in 1918. The leading concerns continue to distribute good dividends.

Chemicals and Chemical Preparations.—The offtake of chemicals and chemical preparations during the past two years has been as follows :—

1920-21 Rs. (lakhs).	1921-22 Rs. (lakhs).
266	191

The following table showing the percentage share of the principal countries of consignment for the years 1913-14, 1920-21

and 1921-22 indicates that the United Kingdom is holding its position in the trade.

——	Pre-war. 1913–14.	1920–21	1921–22
	per cent	per cent.	per cent.
United Kingdom	74·7	75·6	71·4
Japan	1·5	5·1	1·5
Italy	5·2	3·8	2·2
United States	·3	8·2	5·5
Germany	12·4	2·8	11·9
Other Countries	5·9	4·5	7·5
	100·0	100·0	100·0

The total imports of chemicals and chemical preparations (excluding chemical manures and medicines) during the past two years have been as follows :—

Principal Countries of Consignment.	1920-21. £	1921-22. £*
United Kingdom	2,011,502	909,133
Germany	75,372	151,600
Italy	101,204	28,333
Japan	135,263	19,466
United States	218,094	70,800
Total Imports	2,661,420	1,273,000

* Converted at an approximate exchange of 1*s.* 4*d.*

Dyeing and Tanning Substances.—The total imports of dyes obtained from coal tar were as follows :—

Origin	1920–21.		1921–22.	
	lbs. (1,000).	Rs. (lakhs).	lbs. (1,000).	Rs. (lakhs).
United Kingdom	3,467	94	2,960	78
Germany	3,653	117	5,855	138
Belgium	391	13	372	7
Switzerland	317	15	696	22
United States	2,013	76	756	26
Total Imports ...	10,630	336	11,614	292

Of these, aniline dyes are the most important, although India provides one of the most valuable overseas markets for alizarines. The imports of each were as follows :—

Description.	1920–21.		1921–22.	
	lbs. (1,000).	Rs. (lakhs).	lbs. (1,000).	Rs. (lakhs).
Alizarine dyes	3,883	73	5,723	75
Aniline dyes	6,738	263	5,870	217
Others	9	—	21	—
Total	10,630	336	11,614	292

German competition has greatly increased during the past year, and the British makers are faced with a very serious position in India. After perfecting their distributing organisation throughout the country, they are now confronted with heavy German shipments which, owing to the depreciated value of the mark, are being sold at extraordinarily low rupee prices. The German producers have appointed mercantile agents in Bombay and other centres, and are steadily reviving their pre-war organisation. Even the reduced British imports of the past year can not be taken as representing the true position, unless one mentions that they include large quantities of reparation dyestuffs imported for account of the Government of India. American competition is less insistent, but it will be noted that the imports from Switzerland have more than doubled in quantity.

Soap.—The imports show a large reduction during the year owing to depressed trade and a large carry-over of stocks from 1920. It is gratifying to observe that, thanks to their excellent organisation, the trade in household and laundry soap is almost exclusively in the hands of the leading British makers. There is some American competition in high-grade toilet soaps, and in shaving soaps American brands find a ready sale. There is also some import of the cheaper toilet soaps from Japan. On the whole, however, British interests in this trade are well looked after. An Indian company has recently been floated by one of the largest British makers for the manufacture of bar soap in Bengal. Imports are classified by the Customs under three main headings—household and laundry soap, toilet soap, and other sorts. The quantities and values of each imported in 1920-21 and 1921-22 were as follows :—

Description.	1920–21.		1921–22.	
	Cwts.	Rs. (lakhs).	Cwts.	Rs. (lakhs).
Household and laundry soap in bars or tablets.	252,318	77	216,262	73
Toilet soap	49,695	59	11,258	13
Other sorts	11,403	5	5,162	3
Total	313,416	141	232,682	89

The origins of the total imports were as follows :—

Origin.	1920–21.		1921–22.	
	Cwts.	Rs. (lakhs).	Cwts.	Rs. (lakhs).
From United Kingdom ...	302,042	131	229,511	86·5
„ other Countries	11,374	10	3,171	2·5
Total	313,416	141	232,682	89

Paints and Painters' Materials.—*Paints and Colours.*—After the abnormally heavy imports of 1920-21, the total trade last year was reduced by one-third from 152 to 103 lakhs of rupees. The position is as follows :—

Principal Countries of consignment.	1920–21.		1921–22.	
	Cwts.	Rs. (lakhs).	Cwts.	Rs. (lakhs).
From United Kingdom	292,930	126	208,275	79
„ Japan	5,250	2	9,308	3·5
„ U.S.A.	22,291	14	6,891	6·5
„ other Countries	26,612	10	39,492	14
Total ...	347,083	152	263,966	103

The reduction in American imports is worthy of note, and also the fact that certain shipments from Germany were included in the heading " other countries."

Painters' Materials.—These comprise :—

Description.	1920–21.		1921–22.	
	Cwts.	Rs. (lakhs).	Cwts.	Rs. (lakhs).
Genuine turpentine ...	6,804	6	3,241	3
Turpentine substitute	2,811	1	2,172	1
Varnish	33,003	31	12,907	13
Other kinds	Not available.	5	Not available.	4
Total ...	—	43	—	21

Particulars are not yet available with regard to countries of origin in 1921-22, but in 1920-21 the United Kingdom supplied 85 per cent. of the genuine turpentine, 48 per cent. of the reduced turpentine, and 87 per cent. of all varnishes.

Drugs and Medicines (excluding Chemicals and Narcotics).—This valuable trade showed steady progress over a long series of years until 1920-21, but the slump of last year is reflected by decreased quantities and values. The following table indicates the present position :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Camphor	27	21
Cassia Lignea	13	13
Proprietary and patent medicines ...	28	20
Quinine Salts	35	28
Other sorts	108	76
Total	211	158

Sixty per cent. of the camphor imports were drawn from Japan. Very severe competition is encountered from Java in quinine salts, and American competition in proprietary and patent medicines is growing.

The total imports of drugs and medicines have been derived as follows :—

Country of origin.	1920-21. £	1921-22. £*
United Kingdom	1,082,121	482,866
China (exclusive of Hong Kong)	74,144	68,800
Japan	285,697	137,866
Java	97,143	463,266
United States	187,503	74,200
Total Imports ...	2,112,827	1,055,800

The enormous increase in the imports of quinine from Java is somewhat disconcerting from the British point of view, particularly as the importers of British quinine were under-cut in price throughout the year by a wide margin.

Apparel (excluding Hosiery, Boots and Shoes).—The following table shows the total imports during the past two years, and the articles of which they were made up.

Articles.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Apparel (including drapery, uniforms and accoutrements)	182	60
Gold and silver thread	72	23
Hats, caps, bonnets and hatters' wear...	43	15
Lametta	12	7
Second-hand clothing	15	6
Waterproofed clothing	2	2
Total Imports	326	113

The provenance of the imports was as follows :—

Origin.	1920-21. Rupees (lakhs).	1920-22. Rupees (lakhs).
United Kingdom	161	53
France	77	22
Italy	14	4
Japan	31	11
U.S.A.	10	2
Other Countries	33	21
Total	326	113

There are very few comments to make on what was a colourless year in this trade. Heavy stocks were brought over from the previous period and trade was very slack throughout 1921. Moreover, the import duty was raised from 7½ per cent. to 11 per cent in March, 1921, and further to 15 per cent. in March, 1922, and this may tend to discourage imports of the more expensive classes of apparel. The fall in French imports is due to a reduced off-take of gold and silver thread and lametta.

* Converted at an approximate rate of 1*s.* 4*d.*

Hosiery.—*Cotton Hosiery.*—The Indian market is a valuable one with great prospects for expansion. The trade, however, fell away by two-thirds during the past year. The following were the types of hosiery imported :—

Article.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Underwear	109	39
Other sorts	82	24
Total Imports ...	191	63

The following table shows the provenance of the imports :—

Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	18	4
Japan	139	45
United States	22	1
Other Countries	12	13
Total	191	63

This is a trade in which British hosiery manufacturers have never been able to compete, consisting as it does mainly of the cheapest types of singlets, socks, etc., for the bazaar trade. The United States competes principally in the better qualities, but during the past year her place has largely been taken by Germany which country, before the war, supplied nearly 20 per cent. of the total trade.

Woollen Hosiery.—Here again, the slump in trade has curtailed imports very considerably, the total imports being :—

1920-21	1921-22
Rs3,204,903	Rs.548,300

Detailed statistics as regards the origin of the imports are not yet available.

Haberdashery and Millinery.—The principal headings are :—

Article.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Lace and embroidery	83	11
Towels not in the piece	13	1
Other sorts	205	51
Total Imports ...	301	63

and the imports were from the following sources :—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	128	30
France	15	5
Switzerland	84	5
Italy	17	2
Japan	30	7
Other Countries	27	14
Total	301	63

The great reduction in Swiss embroideries is noticeable.

Boots and Shoes.—The figures show a very serious contraction in the trade.

Country of Origin.	1920–21.		1921–22.	
	Pairs	£	Pairs.	£*
United Kingdom ...	710,623	569,548	110,945	66,933
United States ...	259,019	432,272	25,151	24,066
Total imports ...	1,071,029	1,058,324	171,912	102,733

* Converted at an approximate exchange of 1*s.* 4*d.*

This reduction in the total imports is primarily due to the heavy stocks brought forward from the previous year, and the disorganisation and depression in the bazaar trade which delayed the settlement of overdue accounts, and consequently the clearance of the goods. In my last report I dealt at some length with the developments which are going on in the local manufacture of boots and shoes in India. Since then I have despatched to the Department of Overseas Trade 22 sample pairs of boots and shoes manufactured at the modern factory of the India Leather Manufacturing Co., Ltd., Calcutta, and firms interested would do well to examine these specimens of what India can produce. The samples were purchased in the Calcutta market, and ex-factory wholesale prices are attached. The goods were manufactured in a factory equipped with the latest plant provided by the United Shoe Machinery Co., and under the supervision of expert boot makers from the United Kingdom. A glance at the quality, shapes and styles will show that these locally made boots and shoes are likely to be a serious competing factor in the future. India produces the leather required. The machinery is the latest and best that the world can provide, and the supervision and designing are in the hands of experts. It is to be feared that our trade in the ordinary type of cheap footware will tend to decline in future.

Leather.—The import statistics may be summarised as follows :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Hides, tanned or dressed	12	3
Skins, tanned or dressed	9	3
Unwrought leather	12	4
Leather cloth	6	4
Artificial leather	3	·24
Total imports ...	42	14·24

Far more important, however, are the imports of leather manufactures, which (excluding boots and shoes and belting for machinery) comprise the following main items :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Bags and trunks	7	1
Pickers	12	12
Picking bands and straps	19	8
Roller skins	16	17
Saddlery and harness	7	2
Other sorts	25	12
Total imports ...	86	52

It will be observed that while the trade in industrial leather goods used in the cotton and jute mills remained on the whole stationary, those items which depended on the public demand showed a heavy decline. The following table shows the origin of the total imports of leather and leather goods.

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	107	59
Ceylon	2	1
Australia (including New Zealand) ...	2	1
Japan	4	1
United States	11	2
Other countries	3	3
Total	129	67

The United Kingdom has more than maintained her relative position largely because the slump took place in those articles, such as bags and trunks and fancy leathers, where there is normally the keenest competition. The trade in the supplies for the textile industries is still a solidly British trade.

Belting for Machinery.

Principal Countries of Consignment.	1920-21. £	1921-22. £*
United Kingdom	1,310,532	590,000
United States	107,108	62,000
Germany	57	6,800
Total imports ...	1,460,962	672,533

It will be observed that, while British makers have the lion's share of the trade, alike in leather, hair and balata belting, American competition is rapidly growing, especially in leather belting. In 1920-21, nearly 75 per cent. of the imports from the

* Converted at an approximate exchange of 1*s.* 4*d.*

United States consisted of leather belting and the leading combine of American manufacturers have recently had a representative in India, who has placed agencies for each of the constituent firms in the hands of active local merchants. We may therefore expect to see much more active competition than hitherto, particularly as it is understood that the American makers are granting very favourable terms to their agents with a view to stimulating an active selling organisation. The re-entry of Germany into this trade is noteworthy.

Books and Printed Matter.—This has always been an almost exclusively British trade. The most recent figures are :—

1920-21.	1921-22.
Rupees.	Rupees.
65,99,989	54,47,735

Stationery (excluding Paper).—There were large imports of stationery for Government account. The following figures give the imports on private account.

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	127	66
Japan	14	5
United States	28	7
Other countries	13	13
Total imports ...	182	91

It is satisfactory to note that American and Japanese shipments, which had been steadily increasing, have received relatively a greater setback than British supplies. As I stated last year, inasmuch as most of the European commercial houses purchase their stationery requirements through their head offices in London and elsewhere, it would appear that, apart from the wants of the slightly increasing number of American firms in India, the greater portion of the American imports must be for the bazaar trade. We know that the whole of the Japanese imports are for the bazaar demand.

Tobacco.—The imports of all forms of manufactured tobacco show a serious falling-off. The statistics are as follows :—

Description.	1920-21. lbs.	1921-22. lbs.
Unmanufactured tobacco	712,216	1,050,414
Cigars	69,016	22,024
Cigarettes	6,205,562	2,738,897
Total imports ...	7,609,683	4,063,395

The serious decline in the imports of tobacco is probably due to the increased import duties levied in the budget of 1921. This would seem to be proved by the increase in the imports of unmanufactured tobacco at the lower rate of duty, which are then manufactured in India. The Finance Member stated clearly, in introducing the budget on March 1st, 1922: "As regards tobacco, we do not think that for the present, having regard to the great decrease in consumption, any further increase in duty is possible without actual detriment to the revenue." The present duties are:—

Unmanufactured Tobacco	Rs.1 per lb.
Cigars and Cigarettes	75 per cent. *ad valorem.*
All other sorts of manufactured Tobacco ...	Rs. 2-4 per lb.

Cigarettes account for the greater portion of the imports and the subjoined table shows their provenance

Principal Countries of Consignment.	1920-21.		1921-22.	
	Lbs.	Rs. (lakhs).	Lbs.	Rs. (lakhs).
United Kingdom	2,864,032	135	2,299,849	116
Aden and Dependencies ...	34,683	1	8,467	·4
Egypt	19,089	2	17,054	1
United States	2,940,445	106	361,068	12
Other Countries	347,313	12	52,459	1·6
Total	6,205,562	256	2,738,897	131

As I intimated last year, the increase in the import of American cigarettes in 1920-21 was due to a temporary transfer of manufacture from the British to the American factories owing to the former being fully engaged in dealing with a vast accumulation of orders. This has now been righted and the United Kingdom has regained her former position. If the high duties at present in force are retained, a very great fillip will be given to the Indian factories, which will import such grades of tobacco as cannot be grown in India, at the low rate of duty and so be in a position to undersell the imported article.

Rubber Manufactures.—The reduction in the total trade has been appreciable as will be seen from the subjoined table.

Article.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Tyres for motor cars and motor cycles ...	141	96
Tubes for motor tyres	29	14
Other manufactures (except apparel and boots and shoes)	82	44
Total Imports ...	252	154

The statistics relating to rubber tyres are as follows :—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	35	26
Straits Settlements	4	4
France	15	22
Italy	44	12
Ceylon	1	2
United States	37	21
Other Countries	5	9
Total	141	96

It is satisfactory to be able to record that the United Kingdom has regained her position as the principal supplier of rubber tyres although she is still far behind her pre-war percentage of 50 per cent.

Instruments, Apparatus, Appliances, &c.—This is a most important heading and is one of the few trades which have not been seriously affected by the trade depression. The total imports in 1921-22 totalled 515 lakhs of rupees as compared with 581 lakhs in 1920-21. The classification is a very wide one, and it will perhaps be illuminating to examine each of the main items in turn. The totals for the past two years are as follows :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Electrical instruments	418	406
Musical	37	18
Optical	17	7
Photographic	30	26
Scientific and Philosophical	44	35
Surgical	24	15
Other kinds	11	8
Total Imports ...	581	515

By far the most important item is that of electrical instruments and appliances. One of the satisfactory features of the year is the way in which British makers have recently improved their relative position. In 1919-20, the United Kingdom supplied 51 per cent. and the United States 36 per cent. Last year the respective shares were, the United Kingdom 69·2 per cent., the United States 22·7 per cent., Japan 3 per cent., Italy 2 per cent. and Holland 1¾ per cent. The imports of electrical instruments and appliances were derived as follows.

Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	289	284
Netherlands	7	7
Italy	8	16
Japan	13	4
United States	95	80
Other Countries	7	15
Total Imports ...	419	406

Taking the various types, item by item, we find that of a total of 55 lakhs worth of electric fans imported, the United Kingdom supplied 18 lakhs, America 21 lakhs and Italy 14 lakhs. It is encouraging to observe that British makers are making progress in this trade, which during the war was largely in the hands of our American rivals.

In electric wires and cables of a total import of 108 lakhs, the United Kingdom furnished no less than 93 lakhs and America 12 lakhs. Both in rubber insulated cables and in insulations other than rubber British makers were supreme, although imports from the States are increasing. America supplies 33⅓ per cent. of the bare copper wire (electrolytic). So far as electric glow lamps are concerned, the United Kingdom sent 12 lakhs, Holland 6 lakhs, and other countries 6 lakhs of a total of 24 lakhs worth. The competition of the Dutch lamps made by Philips is still keen. In electric lamps, other sorts, the United Kingdom supplied two-thirds of a total import of 3½ lakhs worth.

The trade in accumulators fell from 15 to 8 lakhs, of which the United Kingdom supplied 7·82 lakhs. As regards lighting accessories and fittings, the total trade remained stationary at 30 lakhs, of which 25½ lakhs came from the United Kingdom and 2½ lakhs from America. Similarly, the imports of meters were slightly reduced to 7½ lakhs, of which 6 lakhs came from the United Kingdom and 1½ lakhs from other countries. Thirteen and a half lakhs worth of switchboards (other than telegraph and telephone) were imported, of which 11 came from Great Britain and 2 from the United States. Finally, a total of 145 lakhs worth of unenumerated electrical goods and apparatus remains to be accounted for, and of this 100 lakhs worth was obtained from the United Kingdom and 37 lakhs from America.

Earthenware and Porcelain.—In common with most other "bazaar" trades, the market for earthenware has been very depressed during the year, and this state of affairs is reflected by decreased import figures.

Country of Origin.	1920-21. £	1921-22. £*
United Kingdom	564,163	290,933
Japan	184,550	140,266
Germany	11,686	13,666
Netherlands	33,613	19,333
Belgium	26,689	9,466
Total Imports	880,277	513,333

The Japanese share of the trade has considerably receded from the position at the close of the war. Germany, however, is likely to increase her trade, but it is probable that it will be at the expense of Japan rather than of the United Kingdom.

* Converted at an approximate exchange of 1*s.* 4*d.*

Glass and Glassware.—The following table shows the variety of glass and glassware imported :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Bangles	96	61
Beads and false pearls	45	33
Bottles and phials	55	34
Funnels, globes, and glass parts of lamps	18	17
Scientific glassware	2	2
Sheet and plate glass	71	38
Tableware (including decanters)	15	17
Other glassware	35	21
Total imports ...	337	223

The sources of the supplies were as follows :—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	67	44
Germany	20	31
Belgium	47	24
Austria-Hungary	43	6 (Austria only)
Czecho-Slovakia	—	15
Italy	10	5
Japan	131	86
Other Countries	19	12
Total	337	223

It is interesting to remark that Czecho-Slovakia appears for the first time in the trade returns and that Germany is steadily regaining her position.

Cycles (other than Motor Cycles and parts thereof) and Accessories :—

Country of Origin.	1920-21. £	1921-22. £*
United Kingdom	847,766	90,000
Germany	15,483	13,800
Japan	19,408	3,733
United States	22,839	1,400
Total Imports	914,292	112,200

Prior to the war, British makers supplied 98 per cent. of the trade in cycles, parts and accessories, but during the war Japanese competition in parts and accessories became noticeable. It is interesting to remark that when British supplies became available, importers were only too glad to revert to their old qualities, and the imports from Japan have steadily declined.

* Converted at an approximate exchange of 1*s.* 4*d.*

Building and Engineering Materials, other than Iron, Steel, or Wood.—This trade has been fairly well maintained during the year, as the following figures clearly show :—

Description	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Asphalt	9	9
Bricks, other than firebricks	2	1
Firebricks	10	12
Cement	139	139
Tiles	50	28
Total Imports	226	201

It will be remarked that the only decrease of any account was in tiles. This was largely due to the heavy carry-over of stocks and also to the depressed condition of the Bombay market. Details in connection with the provenance of the imports are only available in the case of cement, the shipments of which were obtained as follows :—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	132	97
China (including Hong Kong) ...	3	8
Japan	—	17
Other Countries	4	17
Total Imports	139	139

The increases in the imports from Japan and other countries (including Germany and Belgium) are noteworthy, particularly as they were made at the expense of the British trade. The most formidable competition in the future, however, is likely to be met with from the dozen or so large cement factories which are either producing or are being erected in India with modern plant and expert management. It is anticipated that by December, 1923, most of these factories will be competing in the market. It is computed that the total annual output will be between 500,000 and 700,000 tons as compared with a total import last year of 125,000 tons. It is only natural to assume, therefore, that the import trade is likely to decline and one of the largest British firms is already putting up a large plant in India.

Hardware (excluding Cutlery and Electro-plated Ware).—As might be expected in a year of almost unparalleled depression, the trade declined by one-third as compared with 1920-21. The heading covers a very great variety of articles, the sum total of which amounted last year to 592 lakhs (say, £3,900,000)

The principal items were as follows:—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Agricultural implements	43	26
Buckets of tinned or galvanised iron ...	4	1
Builders' hardware	67	33
Domestic hardware, other than enamelled ironware	27	12
Enamelled ironware	43	20
Gas mantles	7	7
Implements and tools, other than agricultural implements and machine tools	118	74
Lamps, metal	71	38
Lamps, glass	1	—
Parts of lamps, other than glass ...	18	10
Safes and string boxes of metal	8	5
Stoves	10	5
Other sorts	491	361
Total Imports ...	908	592

This valuable trade was derived as follows:—

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	525	368
Germany	29	61
Belgium	4	2
Austria-Hungary	4	3*
Japan	76	21
United States	226	103
Other Countries	44	34
Total Imports ...	908	592

The relative position of the various suppliers is perhaps shown most clearly in the following table of percentages:—

——	1913-14 (pre-war year).	1920-21.	1921-22.
	Per cent.	Per cent.	Per cent.
United Kingdom	57	58	62
United States	10	25	17
Japan	1	8	3
Germany	18	3	10
Other countries	14	6	8
Total ...	100	100	100

This is a most satisfactory showing, as it indicates that the United Kingdom, in spite of enhanced competition, is able to increase her share of the trade, even as compared with pre-war years. We will now give brief consideration to each of the items in turn.

* Austria only.

Agricultural Implements.—Ninety per cent. of the imports before the war were of British origin, and although American competition has recently increased, the United Kingdom still controls this trade. Mention should be made, however, of a company recently floated by Bombay capitalists and styled The Agricultural Implements Company of India, Ltd., which is erecting works at Jamshedpur, in close proximity to the Tata Steelworks, with the object of manufacturing implements in most common demand, such as kodallies, pickaxes, sledge hammers, etc. The management and plant are American, and it is hoped to commence producing by the end of the year. The capacity of the works is stated to be about 3,000 tons of finished products per annum.

Galvanised Iron or Tinned Buckets.—This is only a very small trade, which has hitherto been in British hands.

Builders' Hardware, such as locks, hinges, door bolts, etc.—The imports last year were reduced by half owing partly to the imports of the previous year not having been taken up and also to the slump in trade reducing building activities in the country. In 1919-20 the trade was fairly equally divided between the United Kingdom, United States and Japan, but during the past year imports from Germany have entered on a considerable scale and it is likely that the cheaper German articles for the bazaar trade will continue to be imported in increasing quantities. Before the war, no less than 43 per cent. of the imports were drawn from this source.

Domestic Hardware (other than enamelled ironware).—Detailed figures are not available, but it is only reasonable to suppose that British makers have held their own in this trade, of which, in 1919-20, they supplied 48 per cent.

Enamelled Ironware.—German and Austrian productions are again appearing on this market, and there has been a corresponding falling-off in imports from Japan, which monopolised the market during and immediately after the war. In my last Report, I referred to the works which are being erected near the Tata steelworks, at Jamshedpur, by Enamelled Ironware, Ltd. This is a company registered in India, in which one of the leading British makers is interested. The buildings are completed but the trade depression and financial stringency have somewhat delayed progress. As a beginning, an output of 10 tons per week is contemplated, and this will probably consist mainly of rice bowls and tumblers. It is satisfactory to observe that, even though United Kingdom goods find it difficult to compete, the market will be supplied by articles made in the Empire with British capital and management.

Implements and Tools (other than agricultural implements and machine tools).—After record imports in 1920-21 the trade declined to a total of 74 lakhs (say, £450,000) last year. Competition from the United States is very keen in every branch and German articles are reappearing in increasing quantities.

Metal Lamps.—This trade has, of late years, been almost entirely in the hands of America, although certain Birmingham makes have a very good name. The Indian market for hurricane lamps is a valuable one, but American makes, such as the Dietz, have obtained a firm footing. One of the leading British firms have, however, recently transferred their Indian business to a company registered in Calcutta, which will not only develop a widespread selling organisation for imported lamps, but will probably manufacture in India in the near future.

Safes and Strong Boxes of Metal.—British makers have hitherto supplied 75 per cent. of the imports, and are actively represented in the country. Before the war competition from Austria-Hungary was met with, and of recent years the United States have increased their share. The market for the cheapest forms of coarse safes, cash boxes, &c., is catered for by Indian firms in Multan and elsewhere.

Cutlery.—The total imports were as follows :—

Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	23	9
Germany	8	5
Japan	5	2
United States	17	1
Total Imports ...	55	17

The trade fell away by more than 50 per cent. owing to the heavy uncleared stocks from last year. It is interesting to note that American competition has been practically eliminated and that Japanese cutlery is no longer in such demand. The cheap Solingen products, however, are regaining their position in the bazaars, and although Sheffield makers hold their own in the higher grades, it is only by mass production and consequent low prices coupled with an active selling organisation that they can hope to compete for the native trade.

Polishes.—The imports have fallen by nearly two-thirds from the record figures of 1920-21 :—

Article.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Leather polish	32	5
Metal polish	9	9
Wood polish	1	1
Total Imports ...	42	15

One of the leading importers informs me that the falling-off in the imports of leather polishes was due chiefly to the abnormally heavy stocks which were imported during the year 1920, and a very large proportion of which went to supply the trade requirements in 1921. They do not ascribe the falling-off to any largely increased use of country-made polishes.

Arms, Ammunition, and Military Stores.—This is a very wide classification which includes such diversified articles as shot guns and rifles, ammunition, explosives for mining use, and gunpowder. The imports were as follows :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Cartridge cases	15	13
Explosives	17	19
Firearms and parts thereof	24	31
Gunpowder	2	2
Total Imports ...	64	70

The expansion is noteworthy, but it is a pity that details are not obtainable as yet.

Brushes and Brooms.

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Paint and varnish brushes	4	3
Toilet brushes	5	·61
Other brushes	7	3
Brooms	·42	·35
Total Imports ...	17·31	7·27

In paint and varnish brushes there is a certain amount of American competition but the trade is predominantly British. In the cheap types of toilet brushes, Japan holds the field, while in the better types, America is competing more and more. Brushware Ltd., the Cawnpore firm, continues to do well.

Toys and Requisities for Games and Sports.—The total trade fell considerably during the year. The total imports amounted to :—

1920-21. Rupees.	1921-22. Rupees.
59,09,752	34,25,635

I have no comments to make on this trade during the past year. It has suffered, in common with most others, by the trade slump. British interest is mainly confined to the requisites for European sports such as tennis racquets, golf clubs, footballs, and requisites for cricket, hockey and polo. Japan supplies the great bulk of the cheap toys, although German competition is returning in the higher grades. Playing cards are virtually an American monopoly.

Tea Chests (entire or in sections).

Country of Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	77	53
Russia	14	4
Japan	5	1
Total Imports ...	102	59

Umbrellas and Umbrella Fittings.—The imports of complete umbrellas, including parasols and sunshades, were as follows :—

Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
United Kingdom	15	10
Japan	2	—
Other Countries	2	2
Total	19	12

The position is satisfactory. The imports from unenumerated countries consisted mainly of oiled paper and other Oriental umbrellas, which do not compete.

The position, however, is not so satisfactory in respect of umbrella fittings, the imports of which were as follows :—

1920-21.	1921-22.
Rupees.	Rupees.
20,34,843	19,80,664

More than 50 per cent. of this trade is in the hands of Japan. The umbrella cloth for the covers of these umbrellas is almost entirely obtained from the United Kingdom.

Jewellery and Plate of Gold and Silver (excluding Imitation Jewellery, Precious Stones and Pearls, Unset).—The total imports were reduced by one half as might be expected in such a year of depression. The figures were :—

Article.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Jewellery	13	5
Plate of gold and silver	13	8
Total Imports ...	26	13

Electro-plated Ware.—The imports were :—

1920-21.	1921-22.
Rupees.	Rupees.
15,66,899	11,67,636

This is almost entirely a British trade.

Carriages and Carts (excluding Railway Carriages) and parts thereof.—This trade has expanded rapidly of recent years, but received a setback in 1921-22. The total imports were :—

1920-21.	1921-22.
Rupees.	Rupees.
82,32,273	63,33,941

Bobbins.—The figures of values imported during the past two years are as follows :—

Principal Countries of Consignment.	1920-21. £	1921-22. £*
United Kingdom	516,560	665,666
Japan	96,969	88,066
Germany	1,344	27,200
Sweden	46	11,266
Total Imports ...	618,757	799,200

The United Kingdom is retaining its firm hold of this trade, and the decreasing imports of Japanese bobbins show that the local mills are reverting to their old supplies. The increase in German and Swedish imports deserves some notice. As I stated last year, attempts are being made to manufacture bobbins in India, but it is doubtful whether these can be successful unless handled by a firm with experience of the details of the industry. Should the leading British firm be prepared to consider the erection of a factory, progress might be made, but it is doubtful whether they would have anything to gain by manufacturing on a relatively small scale in India when their British works can economically meet the requirements of not only India, but the other markets of the world.

Oil Cloth and Floor Cloth.—This trade received a great setback during the year owing to the heavy imports of the preceding year not having been absorbed. The figures were :—

1920-21. Rupees.	1921-22. Rupees.
28,48,891	6,29,675

Furniture and Cabinetware.

	1920-21. Rupees.	1921-22. Rupees.
Total Imports	54,53,715	25,53,901

Packing (Engine and Boiler, of all kinds, including asbestos).—This is almost exclusively a British trade.

	1920-21. Rupees.	1921-22. Rupees.
Total Imports	5,46,918	4,02,094

Toilet Requisites.—This heading includes all toilet requisites not specially enumerated elsewhere.

	1920-21. Rupees.	1921-22. Rupees.
Total Imports	54,49,854	24,38,751

Articles imported by post.—The imports by parcel post into India show a considerable falling off.

	1920-21. Rupees.	1921-22. Rupees.
Total Imports	7,13,50,029	4,09,80,173

* Converted at an approximate rate of 1*s.* 4*d.*

Raw and Semi-Manufactured Articles.

We will now consider those raw and semi-manufactured products in which the United Kingdom conducts an important export trade with India, or is interested by virtue of their scale or the employment of British capital.

Coal, Coke, and Patent Fuel.—One of the most remarkable events of the year which furnishes an eloquent commentary on the state of the Indian coal industry and transport services is the great expansion of the trade in imported coal. The statistics of the imports of coal are as follow :—

Principal Countries of Consignment.	1920–21.		1921–22.	
	Tons.	Rs. (lakhs).	Tons.	Rs. (lakhs).
United Kingdom	9,209	5	705,353	292
Natal	6,900	2	339,631	125
Portuguese East Africa ...	18,430	6	268,272	101
Australia (including New Zealand).	33,678	11	88,375	29
Other Countries	17,776	5	87,651	31
Total Imports ...	85,993	29	1,489,282	578

The shipments of coal, coke and patent fuel were distributed among the principal provinces as follows :—Bombay 1,121,232 tons, Burma 214,040 tons, Madras 87,451 tons, Sind 64,152 tons, and Bengal 14,312 tons.

The imports last year constitute a record and were the result of the high price of Indian coal due to labour costs and reduced output, coupled with the shortage of wagons and consequent high rates of freight on Indian railways. The imports were mainly for consumption by Indian railways, the Bombay mills and for bunkering purposes. Freights from Cardiff to Bombay have remained about 20*s*. per ton during the year, and it is somewhat anomalous that British coal at present export prices can be transported 6,000 miles and can undersell Indian coal with a haul of only some 1,500 miles.

One of the leading millowners of Bombay at the annual meeting of the Bombay Millowners' Association on March 27th, 1922, made the following very pertinent comments on the coal position in Bombay. He said :—

"I should like to bring to your notice one or two facts about the unsatisfactory and wholly illogical coal position in Bombay. At present Bengal coal, second-class good quality, costs us c.i.f. Rs.25/8 viâ Calcutta. If the same coal is railed, it costs us *ex* station now Rs.27, and as there will be a 25 per cent. rise in railway freight from April 1st, after that it will cost us over Rs.31. Now these are absurd and unnatural figures, to my mind, if you take into consideration the following facts: (1) Such coal before the war used to cost us between Rs.12 and Rs.15 per ton.

(2) The quality of the coal was better before the war than it is now. (3) The steamer companies' charge is Rs.10 to 11 per ton for freight (from Calcutta), whereas before the war such freight was only Rs.4 to 5, whilst the freight from Cardiff is only 21 or 22 shillings per ton, which is about the same as the freight before the war. (4) In consequence of this absurd price Bombay is now mainly supplied with either Natal or Cardiff coal. This necessitates vast sums of money being sent out of the country and helps to lower the exchange, and therefore affects not only the coal trade but every other business in India and the cost of every article that is imported. Surely here is room for enquiry and action."

A further reference to this question is made in Chapter V, page 115, when dealing with the Indian cotton industry.

The imports of coke and patent fuel are on a smaller scale, but show considerable expansion.

——	1920–21.		1921–22.	
	Tons.	Rs.	Tons.	Rs.
Coke	1,003	118,871	11,894	700,562
Patent Fuel	—	—	11	2,502

Mineral Oils.—The following are the figures of this valuable trade :—

Kerosene.

Principal Countries of Consignment.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Persia	26	—
Straits Settlements (including Labuan)	19	—
Borneo	64	33
United States	317	313
Other Countries	4	—
Total Imports ...	430	346

Fuel Oils.—The imports were :—

Country of Origin.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Persia	41	109
Straits Settlements (including Labuan)	21	11
Borneo	61	8
Other Countries	—	5
Total Imports ...	123	133

Lubricating Oils.—Details are not available as to the provenance of the imports, but the total figures are as follows :—

Description.	1920-21. Rupees (lakhs).	1921-22. Rupees (lakhs).
Batching oils	65	72
Other lubricating oils	198	161
Total Imports ...	263	233

Salt.—The total imports declined considerably.

Principal Countries of Consignment.	1920-21.		1921-22.	
	Tons.	Rs. (lakhs)	Tons.	Rs. (lakhs)
United Kingdom	93,088	36	71,896	26
Germany	101,165	35	41,002	13
Spain	67,646	25	61,635	21
Aden and Dependencies ...	182,852	67	149,334	47
Egypt	117,348	44	109,953	33
Italian East Africa ...	54,316	19	38,672	12
Other Countries	4,549	2	58	—
Total Imports ...	620,964	228	472,550	152

Sugar.—The imports of sugar continue to grow, but in spite of this expansion, they fell from second to third place in India's imports last year, having been displaced by the phenomenal imports of machinery. The imports of sugar (excluding molasses and confectionery) were as follows :—

——	1913-14 (pre-war year).	1920-21.	1921-22.
	Tons.	Tons.	Tons.
Java	583,000	201,600	623,000
Mauritius	139,600	11,600	61,600
Straits Settlements...	2,900	9,000	5,100
China (including Hong Kong) ...	1,500	5,900	4,400
Egypt	100	4,200	200
Japan	100	100	700
Germany	700	100	*
Austria-Hungary	74,000	—	*
Other Countries	1,100	4,400	22,600
Total (all Countries) ... Tons	803,000	236,900	717,600
Value Rs. (lakhs)	14,29	16,99	26,76

* Not separately distinguished : if any, included in "Other Countries."

A noticeable feature is the import of 13,679 tons of beet sugar, most of which was obtained from Belgium and the Netherlands and was imported into Bombay and Karachi.

Parts of Ships (including Launches and Boats).—This is one of the few trades showing an expansion last year. The total imports were :—

Rupees.	Rupees.
1920-21.	1921-22.
22,20,458	89,63,358

Import Trade, April-June, 1922.

The total imports of merchandise into India for the three months April-June declined from 66 crores of rupees in 1921 to 53 crores in the corresponding period of the present year. It is satisfactory to note that the United Kingdom increased its share from 58 per cent. to 62 per cent. as contrasted with a reduction in the share of the United States from 11·6 per cent to 7 per cent., and in the case of Japan from 6·7 per cent. to 5 per cent. German shipments, however, rose from 1·9 to 5·7 and those from Belgium from 2·2 to 3 per cent.

Textiles.

Cotton Yarns.—The total imports advanced from 2¼ to 2¾ crores. Imports of British yarns show a considerable increase from 1·2 to 2 crores, while those from Japan were reduced from 99 to 64 lakhs. A minor increase from 1½ to 6 lakhs is noticeable in the case of Switzerland.

Piece Goods (unbleached).—The total trade fell from 5·89 to 4·67 crores, and this decrease in the trade was felt by all suppliers, although the reduction in the case of Japan and the United States of America was much greater than in the case of the United Kingdom. British shipments fell from 4·45 to 4·08 crores, Japanese from 1·23 to ·52 crores, and American from 14 to 4 lakhs.

Bleached Goods.—The total imports advanced from 1·69 to 2·39 crores, and it is satisfactory to observe that this increase was entirely in British goods. Imports from the United Kingdom advanced from 1·61 to 2·34 crores, while the imports from Holland were reduced from 4 to 3 lakhs, those from Japan from 2 to ·6 lakhs, imports from the remaining countries being on a negligible scale.

Coloured, Printed and Dyed Goods.—Notwithstanding the fact that there was a very serious shrinkage in the trade last year, a further reduction must be recorded for the first quarter of the present year. The total imports fell from 2·46 to 1·58 crores. Supplies from the United Kingdom were reduced from 2·18 to 1·27 crores, and those from the Netherlands from 14 to 13 lakhs. Swiss imports, however, advanced from 2 to 4 lakhs, and those from Japan from 6 to 9 lakhs.

Sewing Cotton.—The total trade advanced from 12 to 15 lakhs, and the British contribution from 11½ to 14¾ lakhs—a most satisfactory showing.

Haberdashery and Millinery.—Although this trade suffered a considerable contraction last year, the imports during the three months under review fell still further from 17 to 16 lakhs. There was an increase in imports from the United Kingdom from 6 to 8 lakhs, and arrivals from Switzerland advanced from 1·47 to 1·66 lakhs. France's share fell from 2 lakhs to Rs. 66,000.

Woollen Piece Goods.—Notwithstanding the considerable reduction last year, the total imports show a further decline from 24 to 16 lakhs. The contraction is particularly noticeable in the case of British supplies, which shrank from 18 to 11 lakhs, those from France from 2.23 to 1.93 lakhs, and those from Holland from 1 lakh to a negligible quantity.

Machinery and Millwork.

It is not surprising that the prodigious imports of machinery and millwork of last year have not been maintained. The total imports in the first quarter fell from 10 to 6·4 crores. The British share was reduced from 8 to 5¼ crores, and that of America from 1¾ to ¼ a crore, but German

imports increased from 9 to 19 lakhs. The total imports under the various classifications of machinery were as follows:—

	April-June, 1921. Rupees (lakhs).	April-June, 1922. Rupees (lakhs).
Cotton machinery	185	207
Jute machinery	128	51
Electrical machinery...	112	94
Boilers	78	32
Mining machinery	15	11
Oil crushing and refining machinery	12	1½
Paper mill machinery	6	3
Refrigerating machinery	9	2
Rice and flour mill machinery ...	29	16
Saw mill and wood working machinery	9	3
Sewing and knitting machines ...	9	7
Sugar machinery	30	11
Tea machinery	6	3

Although German shipments are increasing, the only serious competition in machinery at the present time is that from the United States, and it will be observed with some satisfaction that the imports from America have declined to a very much greater extent than those from the United Kingdom. In the case of electrical machinery, the British share increased from 71 to 74 lakhs in contrast to the decline in American imports from 36 to 12¾ lakhs.

Railway Plant and Rolling Stock.

The imports for the three months were reduced from 6½ to 4½ crores. Of the latter figure, the United Kingdom supplied no less than 4·06 crores. The remaining imports consisted mainly of non-competing lines, such as wooden sleepers, etc.

Iron and Steel.

Iron Bars and Channels.—There was a slight increase in the total trade from 11 to 13 lakhs, but this is largely accounted for by increased imports from Belgium, from 3 to 7 lakhs, and from unclassified countries (probably Germany) from a negligible quantity to 1¾ lakhs. The British share fell from 8 to 2½ laks.

Iron or Steel Beams, Pillars, Girders, and Bridgwork.—The total trade was reduced from 52 to 40 lakhs; the British share declined from 33 to 27 lakhs, and the American from 8 lakhs to a negligible quantity. Belgium, however, increased her shipments from 8½ to 10 lakhs and the supplies from other countries (probably Germany) increased slightly.

Bolts and Nuts.—The total trade advanced from 8½ to 11½ lakhs owing to increased shipments from the United States and the Continent. The British share fell from 7½ to 4·8 lakhs.

Hoops and Strips.—The total trade advanced from 9 to 12 lakhs. British imports declined from 7·3 to 6·4 lakhs, but American shipments increased from half a lakh to 3 lakhs, and those from the Continent from 1 to 3 lakhs.

Nails, Rivets, and Washers.—A very considerable increase in the trade is to be recorded, the total figures rising from 7¾ to 20 lakhs. Although the British share advanced from 4¾ to 6½ lakhs, that of our principal competitors increased in even greater proportion. Imports from Belgium advanced from 1·3 to 2 lakhs, those from Germany from Rs. 21,000 to 1·4 lakhs, those from Sweden from Rs. 21,000 to 4·5 lakhs, and those from Norway from Rs. 39,000 to 4·2 lakhs.

Cast Pipes and Fittings.—The trade during the three months fell from 33 to 13½ lakhs. The British share decreased from 24 to 10 lakhs, the American from 9 to 2 lakhs, but other countries increased their proportion from ¼ a lakh to 1¼ lakhs.

Galvanized Sheets and Plates.—There was a very material increase in the total imports from 41 to 118 lakhs, and this was almost entirely caused by heavier shipments from the United Kingdom, which increased its share from 31 to 111 lakhs; American shipments declined from 9 to 6½ lakhs. There is practically no Continental competition in this line.

Tin Plates.—The total trade advanced from 35 to 44¼ lakhs and of the latter value the United Kingdom supplied practically the whole.

Sheets and Plates (not galvanised or tinned).—Here again there was an increase, from 43 to 56 lakhs. While the shares of the United Kingdom and Belgium remained fairly constant, that of Germany increased from half a lakh to 14 lakhs, and Germany is now second only to the United Kingdom in the trade.

Wrought Tubes, Pipes and Fittings.—A contraction from 105 to 48 lakhs is to be recorded. The British share fell from 27 to 22½ lakhs, while that of America was reduced from 75 to 16 lakhs. Germany, however, increased her proportion from half a lakh to 7¼ lakhs, and Belgium from half a lakh to 1 lakh.

Wire Nails.—There was a slight increase in the total trade, from 7 to 8 lakhs. The British share was negligible amounting only to Rs. 36,000. While the Belgian share declined from 4¼ to 4 lakhs, that of Germany advanced from 1¼ to 2·8 lakhs.

Wire Rope.—This is almost entirely a British trade. The total imports fell from 7¼ to 5·8 lakhs; this is mainly accounted for by a reduction in American imports from 2 lakhs to Rs. 24,000. The British share showed a slight advance from 5·2 to 5·5 lakhs.

Steel Bars and Channels.—This valuable trade is gradually becoming almost a Continental preserve. The total imports increased from 77 to 83 lakhs. British shipments declined from 13·2 to 12·9 lakhs, Belgian from 47 to 40 lakhs, and American from 11 to 5 lakhs, but German imports advanced from 4·7 to 16·5 lakhs; those from Luxemburg from Rs. 22,000 to 3¼ lakhs, those from France from Rs. 20,000 to 2 lakhs, and those from unenumerated countries from Rs. 60,000 to 2¼ lakhs.

Hardware.

The total trade declined from 196 to 139 lakhs.This reduction is mainly accounted for by the fall in the British share from 126 to 72 lakhs and in that of America from 43 to 21 lakhs. In contrast, German shipments advanced from 11 to 28¼ lakhs and Belgian supplies from Rs. 31,000 to 1½ lakhs.

Electrical Instruments and Apparatus.

The very heavy imports of last year have not been maintained and the figures are reduced from 159 to 66 lakhs. The British share fell from 113 to 46 lakhs, that of the United States of America from 35 to 7 lakhs and that of the Netherlands from 2 to 1 lakhs. Italy increased her proportion from 4·9 to 5·6 lakhs, and the share of unclassified countries increased slightly from 3 to 4¼ lakhs.

Motor Cars.

In spite of the depression in trade and the considerably increased import duty, the total number of cars imported advanced from 632 to 894, the respective values being 45·7 and 35 lakhs. It is noteworthy that while the number of British cars fell from 155 to 75, the American imports increased from 176 to 405, and those from Canada from 105 to 301. British, French, and Italian cars have all been seriously affected, and it is extremely

probable that this is owing to the fact that they are the better grade and higher priced vehicles which cannot stand an import duty of 30 per cent. in competition with cheap American and Canadian cars. These figures largely go to show that the increased duty is, in effect, giving a preference to the American type of vehicles.

The number of motor buses, vans, and lorries advanced from 144 to 148, but as their value declined from 11 to 7·8 lakhs, it may be assumed that they were mainly of cheaper American types.

There was a reduction in the number of motor cycles imported from 185 to 148. The British share of these declined from 121 to 110, that of America from 34 to 26, and that of other countries from 30 to 12.

Rubber Tyres for Motor Vehicles.

The total trade increased from 11½ to 26¼ lakhs. The British share rose from 3 to 6 lakhs, the American from 5 to 8 lakhs, the French from 1 to 7 lakhs, and the Italian from ½ to 2 lakhs. It should be observed that the United Kingdom took third place in the three months, having been passed by France.

Paper and Pasteboard.

The total imports fell from 61 to 55 lakhs. This loss was largely suffered by the United Kingdom as the share of our principal competitors, viz., Sweden, Norway, and Germany increased considerably.

Provisions.

The trade was well maintained and rose from 53½ to 55¾ lakhs. Imports from the United Kingdom rose from 20 to 25 lakhs, those from Holland fell from 4¾ to 2½ lakhs, those from the United States of America from 7·7 to 5·3 lakhs, while Australia increased its share from 5 to 6·3 lakhs.

Dyestuffs obtained from Coal Tar.

The total imports fell from 99 to 62 lakhs. British shipments were reduced from 39 to 7, American from 18 to 2, Swiss from 2 to ¼ lakhs. Imports from Germany advanced from 34 to 49 lakhs.

Coal.

The total imports during the quarter amounted to no less than 333,000 tons as compared with 171,000 tons in the corresponding period of last year. The United Kingdom contributed 203,000, Natal 71,000, Portuguese East Africa 25,000, and Japan 21,000 tons in the period under review.

CHAPTER III.

NOTES ON THE PROPOSED REVISION OF THE METHOD OF PURCHASE OF GOVERNMENT STORES FOR INDIA AND ITS BEARING ON THE POSITION OF BRITISH MANUFACTURERS.

In my last report I dealt at some considerable length with the position of the Government of India as regards the purchase of stores and outlined the gradual change in attitude resulting from the war, the report of the Indian Industrial Commission, the investigations of the Stores Purchase Committee and the quickening of national consciousness which made itself felt with the

opening of the Legislative Assembly. The subject is such a vital one to British manufacturing interests and the proposed changes in the procedure of purchase are likely to be so far-reaching in their effects that I feel confident that it is in the public interest that the developments of the past year should be treated with some care and in detail. While it is true that the definite policy of Government has not yet been announced, it is likely that a statement will be made before this report is published and, in any case, the events of the past year show so clearly the trend of Indian public opinion that I consider it is most important that British interests should be informed of the forces they will have to face and the intense feeling which is shown on all sides in India, so that they may frame their future policy and organisation with a full knowledge of the facts.

If readers will refer to Chapter V., pp. 165 to 189, of my report for 1920-21, they will find that the progress of events is described in detail up to and including the despatch, dated March 29th, 1921, which was addressed by the Government of India to Provincial Governments and Administrations. This despatch embodied the views and provisional decisions of the Government of India after considering the report of the Stores Purchase Committee. The opinions of the local Governments were invited both with regard to it and to the revised stores rules which were also circulated. During the year these reports have been received by the Government of India, but a final announcement of policy has not yet been made owing to a series of events, which can best be followed by a careful study of the debates of the Indian Legislative Assembly.

Evidence of the High Commissioner for India in London before the Indian Railway Committee.—In June, 1921, the High Commissioner for India was examined by the Indian Railway Committee on the question of the purchase of railway stores and in reply to a question arising out of a complaint which had been made in India that preference had been given to England although goods might be bought cheaper and equally well in America or in Germany and that thereby the Indian taxpayer had suffered, he made the following statement :—

"I cannot say what the companies do, but I can tell you as regards my own department, which includes the purchases for State Railways, one is rather between Scylla and Charybdis in these matters. You have got the Indian opinion demanding, from their point of view quite reasonably, that you should purchase absolutely in the cheapest market. I have had a good deal of pressure put on me on various sides in England to deal with British firms and companies; they say it is very hard that they should be penalised by the abnormal advantage obtained by Germany through the rate of exchange and so on; that they have served India well in times past and that if they have to shut up shop things will be worse for us in the future. I have always taken up the position that it is not the business of the Indian taxpayer to subsidise British industries or British labour, but that within certain limits one might give a bit of a preference, especially to people who have formerly dealt with us. The

Director-General of Stores deals with the mass of contracts, but, at present, cases in which it is proposed to deal with a foreign firm come up to me. The general principle I have laid down (it is subject to specific and possibly different applications in particular cases) is that if the lowest British tender is within 10 per cent., say, of the German or Belgian tender, I give it to the British firm. Of course, time is sometimes of the essence of the contract. Sometimes the British firm can turn out the goods required within the time that the Government of India or the Department that requires the goods, specifies, and the foreigner cannot. I also adopt the principle on occasion that if the lowest German tender, say, is considerably lower than the lowest British tender, I communicate confidentially the terms of the German tender to the Britisher, and ask him if he will come down. Sometimes he comes down to an extent that justifies me in giving the business to him; sometimes he does not. Of course, as you understand, the Secretary of State is subject to various questions in Parliament about these matters, and, although I am subordinate to the Government of India and not to him, I have explained my policy to him, and he so much approved of it that he said he thought of asking the companies to follow it also."

Resolution in the Indian Legislative Assembly *re* Purchase of Stores by the High Commissioner for India.—At the September, 1921, Session of the Assembly, the following resolution was passed on the motion of Sir Vithaldas Thackersey, the Bombay industrialist :—

" This Assembly recommends to the Governor-General in Council that the High Commissioner for India in London should be instructed by the Government of India to buy ordinarily the stores required for India in the cheapest market consistently with quality and delivery, and every case, when this rule has not been followed, should be communicated to the Government of India with full reasons for the information of the Legislative Assembly."

Sir Vithaldas quoted the evidence of the High Commissioner for India in London, cited above, and strongly opposed both the payment of higher prices to British manufacturers and also the practice of showing the lowest tender to other tenderers. He also advocated that when placing large orders the High Commissioner should insist that the contracting parties, if required, should give every facility for admitting as apprentices in their works Indian students to acquire practical knowledge of the manufactures. The Government of India accepted the resolution in its final form, quoted above, on the understanding that the cheapest market does not necessarily mean the acceptance of the lowest tender for individual items, that abnormal circumstances have to be allowed for, and that questions regarding quality, time of delivery, facility for inspection and similar conditions are fully allowed for. They also agreed to ask the High Commissioner to furnish an annual or a half-yearly statement for the information of the House. While sympathising with the objects of the proposal relating to the admission of Indian students into British works, Government did not consider it right to insist on such terms being added to contracts for stores as they considered they would thereby lose the advantage of the cheapest market. This portion of the original resolution was accordingly withdrawn.

Action taken by the Government of India on the above Resolution.—On December 22nd, 1921, the officiating Secretary to Government of India, Department of Industries, addressed a despatch to the High Commissioner in London. In this despatch the Department clearly state their views as follows :—

1. They desire that the register of firms eligible for " limited tender " (*see* page 167 of my last report) should be periodically overhauled and should be framed as to include the names of foreign firms of known reliability, which can be trusted to execute contracts satisfactorily.

2. They are willing to be guided by the High Commissioner as to whether " open tenders " should not be advertised in the important newspapers and technical journals of continental countries and America. They ask, however, that the question should be periodically examined in the light of statistics of tenders received annually from foreign manufacturers, and with reference to the principles that where time permits, tenders should ordinarily be called for openly and generally and that the widest possible publicity should be given to such calls.

3. They accept the principle that the lowest " satisfactory " tender should be accepted, and cordially agree that where a British and a foreign tender are equally satisfactory and equally cheap, preference should be given to the former.

4. Criticism has turned mainly on the fact that admittedly the policy which has been prescribed as the correct policy for the Department to follow permanently has temporarily been abandoned in the present abnormal circumstances. In particular, objection has been taken to Sir William Meyer's statement that, purely as a temporary measure and so long as the present abnormal conditions last, he is " willing to accept a satisfactory British tender in preference to a foreign tender when the gap between the two is not excessive," and that, " as a starting point, he has laid down that the gap should not exceed 10 per cent." Moreover, exception has been taken to Sir William Meyer's practice of communicating foreign tenders confidentially to British manufacturers, in order to give the latter an opportunity of submitting a revised tender.

5. As regards the former point, the Government of India recognise that some misconception prevails in India. They are aware that Sir William Meyer has not laid down a hard-and-fast rule that a 10 per cent. preference may legitimately be allowed in favour of British tenders over foreign tenders. On the contrary, they understand that every case in which it is proposed to set aside a lower foreign tender in favour of a British tender is submitted for the High Commissioner's personal decision, and that each such case is decided on its merits. At the same time, the principle of preferential treatment for British firms in special cases has been admitted, and the lowest satisfactory tender is not always accepted. And, since the Government of India are most anxious that the operations of the Stores Department should be conducted purely on business principles, and should be free from any suspicion that British industries are being subsidised, even as a temporary measure, at the expense of the Indian taxpayer, they have thought it necessary to examine the whole basis of the temporary deviations from the accepted policy of the Stores Department to which reference has been made above.

6. There is no room for doubt that, at present, in cases where tenders are called for in the open market, there is ordinarily a very wide margin of difference between the lowest British tender and tenders from countries such as Belgium and Germany. In a recent case which has been brought to the notice of the Government of India, the margin of difference between the five successful Belgian tenders and the lowest British tenders varied from 43 to 91 per cent. The high cost of production in England no doubt accounts largely for the high British tenders, and the increase in the cost of production is believed to be due mainly to the increase in

wages. In this matter, however, as the High Commission will realise, the Government of India can do nothing to help. Much as they regret the unemployment in England, they are quite clear that they cannot allow orders to be placed in England at preferential rates merely to enable wages to be maintained at an uneconomic level. Such action on their part would be unfair to the Indian taxpayer, and, moreover, it would do nothing to solve the problem of the British manufacturer. For that problem there is only one solution, and that is for employers and employees to come to such adjustments as will enable the British manufacturers again to compete in the world's markets.

7. A more serious difficulty is that of foreign exchanges, since this factor, over which British manufacturers have no control, is mainly responsible for the margin between the British and foreign tenders. In the case of the five tenders already referred to, the successful Belgian tenders, with one exception, would have been well above the lowest British tenders had Belgian exchange been normal. The difficulty is even more pronounced in the case of Germany, and the point is one which cannot be ignored in deciding what policy should be followed.

8. As regards Belgium, the Government of India have decided that the exchange difficulty constitutes no bar to the immediate enforcement of the permanent policy of the Stores Department. The capacity of Belgian manufacturers is strictly limited and, this being so, the Government of India see no reason why full advantage should not be taken of favourable tenders from this country. The case of Germany is more difficult, but the Government of India consider that lower tenders received from Germany should be accepted if reliance can be placed on delivery up to time, up to sample and at the price agreed upon, and if they are otherwise satisfactory.

9. *The Government of India have arrived at the conclusion that "all temporary expedients designed to meet an abnormal and transitory state of affairs should now be abandoned, and that the Stores Department, in placing contracts for stores and materials required for Government Departments in India, should revert to the ordinary business principle of accepting the lowest satisfactory tender. They desire, also, that the practice of disclosing foreign tenders to English manufacturers should be discontinued as being inconsistent with accepted business principles. The Government of India have no desire at all to fetter the discretion of the High Commissioner in deciding between tenders on the principle laid down, and, in making such decision, he will of course take fully into account such considerations as quality, reliability, ease of inspection, time of delivery and the like. In regard to locomotives, wagons and similar railway material, the High Commissioner in placing orders will, of course, bear in mind the importance of strict adherence to British standard specifications and Indian standard drawings. Deviations from the standard drawings, especially in respect of renewable parts, may cause great inconvenience in India. The Government of India consider, however, that no preference should be given to British firms merely because they are British, except in the case referred to at the end of paragraph 3 of this letter (clause 3 above), and they are of opinion that departure from the principle of accepting the lowest satisfactory tender can be justified only in cases when the placing of an order with a foreign firm, though temporarily securing a cheaper article, might have the result of depriving the High Commissioner in future of a source of supply on which he might have to rely for completing further orders."*

10. They desire that a half-yearly statement for the periods ended 30th June and 31st December respectively should be submitted by the High Commissioner in future, indicating the cases in which the lowest tender has not been accepted, and that steps may be taken for the preparation and submission of these statements, beginning with the statement for the period ending the 31st December, 1921.

11. Finally, the Government of India ask that the High Commissioner should consider the suggestion that when placing large orders he should

insist on the contracting parties, if required by him to do so, granting facilities for the admission of Indian students as apprentices in their works, so as to afford them opportunities to acquire practical knowledge of manufacturing processes, and that he should furnish his views on the subject.

In a despatch dated January 25th, 1922, the High Commissioner agrees to carry out the general instructions given and adds that since he was apprised of the acceptance by the Government of India of the resolutions of the Indian Legislature bearing on the subject, he had put a stop to the special temporary practice of allowing some preference to British manufacturers, including the communication to them of competing foreign tenders. The High Commissioner further states that the register of firms eligible for limited tenders is constantly being extended and is at present being completely overhauled and that the inclusion of suitable foreign firms will receive particular attention.

The High Commissioner mentions that the instructions of the Government of India that the question of advertising in foreign newspapers, etc., should be periodically examined will be borne in mind, but adds that experience goes to show that notifications in the leading British papers are watched by foreign firms. In occasional cases, advertisement of requirements is avoided because of the risk of such publicity producing an unfavourable effect upon the market concerned. Sir William Meyer promises to submit half-yearly statements showing all cases in which tenders other than the lowest have been accepted. These statements will be drawn up in two parts, one dealing with cases in which a lower foreign tender has been set aside wholly or partially in favour of a British offer, the other with cases in which such discrimination is made as between British firms.

In conclusion, the High Commissioner, referring to the question of Indian apprentices, explains that some months previously, on his own initiative, he gave instructions that when the two lowest tenders are fairly close together, and where the lowest is that of a firm which has declined to admit Indian students, preference should be given to the other. He does not consider that it would be advisable to go beyond this, as otherwise the Indian taxpayer would be burdened unduly.

Formation of the Indian Stores Department.*—In concluding my remarks on the Stores question in my last report, I stated that the decisions of the Government of India and the amended stores rules which were put forward for the consideration of local governments were not to be taken to be in final form, as objections might be raised and, in any case, final sanction for them had not been granted, although a whole year has passed, we have not yet received any definite pronouncement of the policy to be adopted in future, but it is hoped that a statement will be made before many months are past and, I hope, before this report is published. In the meantime a good deal of preliminary work has been carried out and the question has been threshed out in the Indian Legislature. In order to enable my readers accurately

* The new Indian Stores Department, which is being set up in India, should not be confused with the existing India Store Department of the Office of the High Commissioner for India, in London.

to gauge Indian opinion on the subject, I propose briefly to deal with the progress that has been made.

Office of the Chief Controller of Stores in India.—In order to avoid delay in the establishment of an organisation for the purchase of stores in India, the sanction of the Secretary of State was obtained in 1921, for the appointment, on a temporary basis, of the three chief departmental officers, viz., the Chief Controller and the heads of the purchasing and inspection branches. Early in the present year, Mr. J. S. Pitkeathly, C.I.E., C.B.E., D.S.O., was appointed Chief Controller of Stores on a two years agreement. Mr. Pitkeathly was originally in the employ of a leading British electrical engineering firm, but subsequently joined the Indian Public Works Department, and during the war rose to be Deputy Director of Works in Mesopotamia. Since the armistice he has also held very important posts in the Afghanistan campaign and in Delhi. His wide knowledge of engineering and the extensive experience he has had both in purchasing stores and material and in organising and administering important enterprises render him eminently suitable for the arduous and responsible duties which he has now undertaken. Appointments have also been made, on a temporary basis, of a Director of Purchases and Intelligence and of a Chief Inspector.

The Chief Controller of Stores is now established in the Industries Department of the Government of India and can be addressed at the Secretariat in Delhi from October to April and in Simla for the remainder of the year. Although, for urgent reasons of public economy, the grant for his Office in the present year was reduced by the Indian Legislature from R.767,600 to R.383,800, *i.e.*, by half, a good deal of preliminary organisation work is being carried out. In the first place, the section of the Indian Munitions Board which was used for the purchase of textiles during the war and which had continued to purchase Army requirements since the armistice, has been taken over with its Chief, Lieut.-Col. H. M. Alexander, O.B.E., D.S.O., who has been appointed Director of Purchases and Intelligence in the new organisation, and who proceeded on deputation to the High Commissioner's Office in March last in order to study the system employed in London. The textile branch forms the nucleus of the organization and is already being used in those cases where textiles can be purchased in India—its purchases for the Army alone last year amounted to R.130 lakhs. To this will be added as funds become available and the services of experienced officers can be obtained, other sections dealing with oils and paints, cement, leather and so on until finally it is hoped to open a section dealing with engineering stores which of course will be the most complex of all branches, it requires a highly-trained technical staff. Each section will be self-contained with its own inspectors and its own purchasing officers. The metallurgical Inspectorate at the Tata Iron and

Steelworks, Jamshedpur, has been taken over by the Chief Controller, whose inspectors are now passing 100,000 tons of steel rails and fishplates per annum. The Government Test House at Alipore, near Calcutta, has also been brought under the control of the Stores Department and it is proposed to extend it almost immediately. Some idea can be obtained of the expansion which has already taken place when it is realised that tests are now being made at Alipore against contracts amounting to R.366 lakhs as compared with contracts of a value of only R.16 lakhs five years ago.

All these efforts, however, can only be tentative and provisional until the Committee on Retrenchment which will sit this cold weather under the chairmanship of Lord Inchcape, has pronounced its verdict as to whether India can afford the funds for the department, and—more important still—until the Government of India has made a pronouncement of its policy as regards the purchase both of local and imported stores and has issued revised stores rules laying down the conditions on which these purchases will be made.

The Stores Rules.—In my last report, pages 302-310, I gave in extenso the proposed rules governing the supply of articles for the public service which the Government of India circulated to local governments and administrations on March 29th, 1921. The opinions of the provincial authorities have now been received and a communiqué would probably have been issued but for the fact that the question has been complicated by a resolution of the Legislative Assembly in March following upon the decision of the Government of India to allot 150 crores of capital expenditure to railways during the next five years in accordance with the recommendations of the Acworth Committee.

Resolution of the Assembly with regard to the establishment of Railway Industries.—On March 2nd, 1922, the Legislative Assembly on the motion of Sir Vithaldas Thackersey, the Bombay Millowner, who, it will be remembered, moved the resolution, previously cited, with regard to the purchase of stores by the High Commissioner in London, adopted the following resolution.

"This Assembly recommends to the Governor-General in Council that a Committee consisting of members of the Indian Legislature be appointed to consider and report at an early date as to what steps should be taken by the Government of India to encourage the establishment of the necessary industries, so that as large an amount as possible of the R. 150 crores proposed to be set aside for the rehabilitation of the railways during the next five years be spent in India, and further to advise the Government of India in regard to the revision of the Indian Stores Rules."

The debate is so illuminating, showing, as it does, both the strength of public feeling in India and also the attitude of the Government of India, that I have thought it worth while to reproduce extracts from the principal speeches which I would

earnestly commend to the careful attention of British manufacturers of Government stores and in particular of railway rolling stock and plant.

Sir Vithaldas Thackersey in proposing the resolution said :—

" During the discussion of the Financial Committee, figures were also placed showing the probable expenditure over the Railways during the next ten years, and there also it was seen that a furthr Rs. 30 crores a year would probably be required during the subsequent five years. That means that during the next ten years we would be spending about Rs. 300 crores for our railway purposes alone. The Committee, however, thought that it was quite enough to look ahead for five years and, at the end of three years, the future programme might be considered by a Finance Committee. Now, my object in moving this Resolution in this House is that we should try to see if we cannot spend as far as possible and as much as possible out of this Rs. 300 crores in the country by special efforts taken in the direction of the development of industries manufacturing railway materials. I am sure, no one in this House will disagree with the policy I am enunciating. The only question is what active steps can be taken so that we can get an immediate result. It is true that Government have framed rules by which articles of Indian manufacture may be brought for the requirements of Government provided the quality is good and the price is not unfavourable. It is also true that Government have given more than once an indication that they are willing to encourage the establishment of industries in India. Government may take credit that they appointed an Industrial Commission in the years 1916 under the presidency of Sir Thomas Holland. That Committee took two years to report; they went very thoroughly into the several problems of industrial development and reported in 1918. I want to know what steps have been taken to bring into effect the recommendations of that Committee. Government appointed in December, 1919, the Stores Purchase Committee. That Committee took 7 months to report and made an excellent report by the majority, the minority, however, differing in many respects from the majority. One year and nine months have passed since this Committee has reported. We know the Government have taken action in appointing an officer as Chief Stores Purchase Officer in India; but, so far as actual steps taken to encourage industries are concerned, I maintain that nothing has been done.

" If Government wanted to take immediate action for the encouragement of Indian industries, the Report of the Stores Purchase Committee is full of valuable suggestions, and they could have taken the necessary action. I will not take up the time of this House by going through the several recommendations made by that Committee, but I will read to you one most important recommendation that could have at once been accepted by the Government and given immediate effect to in the interests of India. The recommendation runs thus:

> " ' We consider that, in addition to providing in this manner for the full utilisation of existing industries in India, Government must further give them practical encouragement specially in the initial stages of their enterprise and must assure them of a reasonable measure of protection against outside competition. The measures advocated by us, subject to appropriate restrictions and safeguards are:
>
> (1) Guaranteeing of orders for a limited period;
> (2) Placing of orders at favourable rates for a limited period;
> (3) Favourable railway rates;
> (4) Revision of the fiscal policy of Government with a view to protection of local industries.' "

" At the end of the paragraph, the Committee add:

" We consider that the conditions under which contracts are placed in India should be assimilated to those attached to contracts entered into by the Director General of Stores at the India Office which at present are in some respects more favourable to the British manufacturer.' "

" Now, I seriously ask Government whether the condition No. (1), in regard to guaranteeing of orders to the Indian manufacturers, and condition No. (2), in regard to the placing of orders at favourable rates, have been adopted, although the Report has been before the Government for the last one year and nine months? Are we to go on considering the general aspects of the question, the rules and regulations, and appointing officers, while orders worth crores and crores of rupees are being daily and regularly sent to England in spite of the recommendations of the Stores Purchase Committee and the Indian Industrial Commission that the railway stores should be purchased in India? I submit, Sir, we must take immediate steps, so far as the orders worth crores and crores of rupees for railway purposes are concerned, to place them with Indian manufacturers. Moreover, Sir, how many industries would be required to supply railway stores to the value of crores and crores of rupees? We can count them on the fingers of one hand. I will give the House a few instances from the figures placed before us by Government about the requirements of the railways during the five years, and if you want to take the figures for ten years you have practically to duplicate the amount that I am mentioning. Goods wagons will be required to the extent of Rs. 31 crores during the next five years, or 62 crores of rupees will be spent for wagons during the next ten years. Coaching vehicles will be required to the extent of 18 crores during the next five years, bridges, girders, etc., four crores during the next five years, and much more during the next ten years. Then, again, rails would be required—I do not wish to go through the whole list, but these are, I think, sufficient instances to show that one kind of industry, that is the industry for manufacturing goods wagons, if properly encouraged and supported, will keep in the country 62 crores of rupees during the next ten years. If we support the coaching vehicle industry, it would give us 36 crores of rupees in ten years. If we support the bridge industry, it would give us eight crores of rupees in ten years. So let us sit together and consider what can be done immediately to enable Government to place these orders worth some crores of rupees in the country. I am leaving aside for the moment a thousand and one things like pens, pencils, and other small and big items that are required for our Stores Department. I do not attach less importance to those articles, but let us attach greater importance to these really important articles which will retain in the country some crores and crores of rupees."

" After all, the suggestions I have made and the suggestions which the Stores Committee have made are not new. Government have followed that policy in the past. I will give one typical instance and I think it is a great credit to Government for what they did at the time. When the first Steel Industry was to be started by the Tatas, Government came forward liberally and guaranteed the purchase of 20,000 tons of rails every year for ten years at a price equivalent to the rate which would cost Government to import rails from England. That system works splendidly, and I firmly believe that steel industry could not have been started in those days without such a guarantee, and the result was that, during the war, we were independent of the foreign import of rails, and other steel products."

" What we ask the Government is to follow a similar policy to a greater extent. It was a great thing in those days to say that Government would buy 20,000 tons of rails from the new Steel Company. I would say that if new industries were started, Government would be perfectly justified in

saying that they would purchase all their requirements from such companies. In regard to the Tata Steel Company, out of probably 150,000 tons of rails that were required for Railways in India, Government were liberal enough to say that they would buy only 20,000 tons from the Tata Steel Company. The question whether any preference should be given in point of prices, that is, whether any higher prices should be given to the new industries that we start, is one which I will not take up to-day. The question will solve itself with the recommendations that we may receive in the report of the Fiscal Commission. If the Fiscal Commission decides that protection up to a certain extent should be given to certain industries, then, under my proposal, those industries will automatically get higher prices to that extent. We hope it will not be very long before the fiscal policy is brought up for consideration before this House and I do not wish to touch at great length now on the relative advantages of protection and free trade in regard to the starting of new industries. Of course, one thing Government will have to consider and must consider, and that is, the protection of Indian industries against dumping. There has already been going on a little of dumping, and I am informed that because there are certain new industries of wagon-making starting in India, a very strong ring of English manufacturers have now resolved to dump wagons for the time being. If they dump wagons at a lower rate than that at which they can be manufactured, I think that in the interests of the country it will be entitled to the same protection which Great Britain has given to England, and which Canada has given to the Canadians, by the anti-dumping laws. You may not give special preference, but surely you are not going to kill your industries by the dumping process of foreign manufacturers or the strong rings that may be formed to kill you, and after killing you to exploit you in future.

"Sir, it may be asked whether we can manufacture any or all of the articles required for the railways if we give this encouragement. I made several inquiries of high officials connected with the management of railways, including my honourable friend Colonel Waghorn, who is taking such a keen interest in the matter, and I am sure that in time, if proper encouragement is given, if economic plants are introduced and up-to-date methods are followed, India can supply most of her requirements, if not all. Take, for instance, the manufacture of wagons. I am told that most of the materials required for the manufacture of wagons can be made in India, or will be made in India during the next year or this year. The only things required to be imported would be wheels and axles. The cost of wheels and axles, I am told, would come to about Rs. 1,000 per wagon, that is, about 10 to 12 per cent. of the cost of a wagon. If you calculate on these figures, you will find that out of the Rs. 31 crores, you can spend in India about Rs. 25 or Rs. 27 crores for the wagons alone, and send out of the country only Rs. 3 or Rs. 3½ crores. The same remark applies, in a greater or less degree, to other articles of requirements. Now, Sir, this shows that the larger part of our expenditure can be incurred in India. And, after all, what is this expenditure that we spend in India? How does it help? It helps first and foremost the working classes. What do you require in a wagon? You require steel. How is steel manufactured? You have to dig the ore. It goes into the furnace and is smelted with coal and flux, which in their turn are products of labour. If we calculate the amount of labour required, 75 per cent. of the whole cost is labour, one way or the other. Workmen will get more employment, and the money will remain in the country."

The original motion dealt only with the first part of the resolution as finally passed and left out of account the revision of the Stores Rules. Mr. C. A. Innes, the Honourable Member for Commerce and Industry, in a very telling speech pointed out that the early revision and publication of the Stores Rules lies at the heart of the problem. His exposition of the situation is so clear

and concise that I would emphasise it by including the following extract. Mr. Innes said :—

" If the Indian Stores Department is established, it will purchase for the State railways all railway materials which can be procured in India. Further, if that Indian Stores Department is properly organised, if we have proper machinery and intelligence, and, above all, inspection, if that Department acquires the confidence of other great consuming Departments, especially the company railways, then the Stores Department would be mainly occupied in buying railway material not only for State railways, but for company railways also. Any industries which we will be able to start, therefore, will have to deal with the Indian Stores Department. My point is this: *This Stores Department works in accordance with certain formulæ or principles. These formulæ or principles, when they have been finally settled, will be published, and private firms who desire to set up in this country will be guided in deciding whether to do so or not mainly by these formulæ or rules. Therefore I say that the best thing we can do at present is to get our formulæ or rules into proper shape, to get them into such a shape that we shall give all legitimate encouragement to private firms which wish to set up in India the business of supplying railway material.*"

The Hon. Member then proceeds to deal with the difficulties of the manufacturing position in India with particular reference to railways. He adds :—

" The two main things which we require to make in India at present in order to carry out the objects which Sir Vithaldas Thackersey has in view are, firstly, railway wagons and, secondly, locomotives. We have three firms making railway wagons at this present moment, but they only make a portion of the wagons. They import certain parts from Europe, they make other parts in India, and they assemble them together. They import from home such things as axles, wheels, springs and the like. Similarly, I may mention that there is a large important firm which has already got under consideration the idea of starting the manufacture of locomotives in India. Here again, this firm will not be able to manufacture for some years to come the complete locomotive. As in the case of wagons, it will have to import some parts from England, and other parts they can make out here. What is the difficulty, what is it that prevents us from making the complete wagon or the complete locomotive in India? It is the lack, in the first place, of open-hearth acid steel. Secondly, we have not got in this country, at present, any manufacture of high-grade iron. Thirdly, we do not manufacture in this country rivet steel. Therefore, for the next few years, we must content ourselves with a partial manufacture in this country. What we can hope for is that firms will be attracted to come out to this country and manufacture such parts as are at present possible of railway wagons and locomotives.

" Now, how will they be attracted? These firms come to me and tell me their difficulties, and their difficulties are always associated with these Stores Rules. We have these Rules in a provisional form at present. They deal largely with the question of price; what our price formulæ should be in regard to articles wholly or partially made in India. The difficulty lies in getting these formulæ right. My suggeestion to the House is this: That, instead of appointing a committee *ad hoc* for the purpose of considering how railway industries should be started in India, they should allow me to appoint a small committee of this Legislature to consider, in consultation with the Chief Controller of Stores and with myself, these price formulæ, and I am perfectly certain that that is the right way of going ahead."

Sir Vithaldas Thackersey had strongly advocated that, if new industries were started in India, Government should guarantee

to purchase their requirements or a certain portion of their requirements from such companies, as was done in the case of the Tata steelworks. To this point, the Hon. Member for Commerce and Industries replied as follows :—

" I have no objection at all to this Committee taking up the further question within what limits and on what principles we can adopt this expedient of giving guarantees of orders to firms. Sir Vithaldas Thackersey spoke as if it was the easiest possible thing extending assistance to every firm that came to us and said: 'I am going to start an industry; give me a guarantee of orders.' Well, I am perfectly certain that we cannot advance in that heroic way. We have already adopted this measure once. We have adopted it in the case of the Tata Iron and Steel Works as regards steel rails and now we are taking for our railways all the steel rails that Messrs. Tata, Sons, & Company can supply. We have adopted it in another case. In 1917, we offered a guarantee of orders to Messrs. Tata, Sons, & Company for steel plates. Unfortunately, they have not been able to build up their rolling mills and they are not yet making any steel plates. That device may be a very legitimate device if you start a big industry on a large scale and put a lot of capital into it, but it cannot be applied to every firm. Supposing I want 5,000 railway wagons and I have a large capitalist firm which satisfies me that it is going to put down proper workshops and invest a large amount of capital in the business, then I should be perfectly justified in giving it a guarantee of orders. But, supposing half-a-dozen, 10 or 15 workshops all over the country came to me and say, 'I am prepared to make wagons: give me a guarantee of orders' and I split up a guarantee, say, for 5,000 wagons among ten firms, the result would be that none of these ten firms could make a living. It would not be an economic proposition. Then there are other difficulties. Guaranteeing of orders is not enough. In the case of Tata, Sons, & Company, we guaranteed them, as far as I remember, c.i.f. English price landed at Calcutta. That seems a reasonable proposition, but in these difficult times it may or may not be enough. Sir Vithaldas Thackersey has put his finger on one of the difficulties.

" He alluded to the danger of dumping. He suggested that English firms were now dumping wagons in India. I have no reason to suppose that that is a true statement of the case, but we know that Germany and Belgium can dump by reason of their depreciated exchanges. They can land iron and steel in this country at the present time at very low prices. If we guarantee orders at c.i.f. English price Calcutta, that might be no use to a firm. That is merely one instance of the difficulty of this particular device."

One of the most important points in this illuminating debate was the declaration made by the Secretary to the Government of India in the Industries Department as to the fixed policy of Government in regard to industrial concessions in India. Mr. Chatterjee said :—

" Munshi Iswar Saran asked for a declaration that Indians and Indian firms will be encouraged to start industries. There is no difficulty, Sir, in making that declaration. *The settled policy of the Government of India, as I think we have mentioned more than once in this Assembly, is that no concession should be given to any firms in regard to industries in India, unless such firms have a rupee capital, unless such firms have a proportion, at any rate, of Indian directors, and unless such firms allow facilities for Indian apprentices to be trained in their works. This has been mentioned more than once, and I can only repeat this declaration.*"

This point cannot be too strongly impressed on British manufacturers, who may be considering the erection of works in India.

It is one of the most eloquent proofs which can be adduced of the changed attitude of Government as a result of the Reforms scheme.

Committee of the Indian Legislature to consider the Stores Rules.—In accordance with the resolution cited above the Government of India appointed this spring a Committee, with the terms of the resolution as its terms of reference, comprising the following gentlemen :—

The Hon. Mr. C. A. Innes, C.S.I., C.I.E. (Member for Commerce and Industries)—Chairman.
Col. W. D. Waghorn, C.B., C.M.G. (President of the Railway Board).
Mr. A. C. Chatterjee, C.I.E., I.C.S. (Secretary to the Government of India in the Department of Industries).
Rai Bahadur Lala Ram Saran Das, C.I.E. (Council of State).
Mr. Lalubhai Samaldas (Council of State).
Sir Vithaldas Thackersey (Legislative Assembly).
Mr. B. S. Kamat (Legislative Assembly).
Mr. C. W. Rhodes, C.B.E. (Legislative Assembly).

This Committee are now (June, 1922) sitting, but it is not expected that their report will be issued for some months, and until their deliberations are ended no definite action can be taken by Government on the stores rules.

The Purchase of Imported Stores.—The crux of the whole Stores question from the point of view of the British manufacturer of stores and plant for Indian Government requirements is the method of purchasing imported stores. It is a foregone conclusion that preference will be given to goods manufactured in India and also for some time, to goods assembled or partly-manufactured in India from imported materials. This preference should be a great incentive to British firms to erect works in the country, particularly if Government is prepared— as in the case of the Tata Steel works—to guarantee to take a certain fixed quantity of the output. One leading British manufacturer of locomotives has already floated an Indian company with Indian directors on the board and is erecting a plant in the vicinity of the steel works at Jamshedpur. A leading Canadian car and waggon company has recently despatched a representative to India who has been negotiating with Government for the establishment of a rolling stock works. Many other prominent British manufacturers of railway and other types of plant have been in close touch with the State authorities, but in most cases consider it premature to make definite plans until Government formulates and announces its policy, which will probably be towards the end of this year. There seems to be no doubt that, in those cases where the Indian Government normally takes a large share of a company's productions and where manufacture in India shows a reasonable chance of success, British manufacturers would be well advised seriously to consider the establishment of works in this

country. The present tendency is all towards the protection and development of India's industries, and with the transfer of more and more power into Indian hands, this tendency will be accentuated. Moreover, there is a danger that unless British makers take their opportunities and move with the times, they will find that their foreign competitors may steal a march on them. India is determined to develop its industries and would welcome foreign enterprise if British capital and energy are not available. This would mean the introduction of foreign standards and practice and would do incalculable harm to our interests. The future position with regard to imported stores is not so clear and depends entirely upon the attitude of Government after receipt of the report from the Committee of the Legislature already referred to. The present procedure of purchasing all imported stores through the medium of the India Store Department has worked smoothly and satisfactorily for many years. The heads of the large purchasing departments in India are quite satisfied with it and it certainly suits the British manufacturer, who can deal with an organisation in London which understands the needs of India. Moreover he is in a position to give the most favourable quotations as he is not burdened with heavy representation expenses and receives cash on the spot. Vested mercantile interests in the ports of India who are engaged in the import trade have always been opposed to this system of purchases in London and now find themselves in agreement with the Indian politician, who wishes to see the conduct of this great volume of purchases (which in 1921-22 amounted to 14 crores of rupees) removed to India. The first definite step taken to voice this view was by the majority of the Stores Purchase Committee 1919-20, who stated their views unequivocally. Their conclusions were given on pp. 184-5 of the previous Report; the observation of the Government of India, which were in general agreement with the minority proposals of Messrs. Collier and Ryan, will also be found on p. 185 of that Report.

There is a very strong desire among many Indian politicians to abolish the India Store Department in London so that the Stores Department should be free to call for all tenders locally on a rupee basis and to place all contracts for Government requirements, whether locally manufactured or imported. It is possible that the Committee now sitting may make some such recommendation. Such a course would be a great blow to British manufacturing interests and would, in the opinion of competent judges, not be conducive either to economy or efficiency.

Whatever may be the outcome of the present enquiry, the British manufacturer will be forced to revise and improve his methods of representation in the country, and in those cases where his interests are important, he should either open his own branch or appoint a resident employé in India. It is likely that the new Stores Department will be given very great latitude in the purchase from stocks in India and this will render it imperative in many cases for makers to establish their own depôts

and to carry stocks of articles of the type usually purchased by Government. In those cases where the trade is not sufficient to warrant the expense of establishing a branch office, then the British maker should appoint mercantile agents who would stock his goods and promote his interests, always bearing in mind that even the most active merchant holds very many agencies which sometimes clash. In order to obtain satisfactory results from this method, it is desirable to attach a resident employé to the Agent's staff, to conduct the demonstration and active selling work, to watch his principal's interests, and generally to insure that everything possible is being done to further them.

It is to be hoped that, if the Government of India decides to alter the method of purchasing imported stores, it will allow adequate time for its old suppliers to adapt themselves to new conditions and establish their organisations in India.

CHAPTER IV.

METHODS OF REPRESENTATION AND DISTRIBUTION IN INDIA.

It is now three years since I dealt with this question at considerable length in the Report on the Conditions and Prospects of British Trade in India at the close of the War, published in 1919. The trend of events in the meantime has largely confirmed the opinions expressed and the advice given in that report, and those British exporters who may wish to read a treatment of the subject in detail cannot do better than secure a copy of it from H.M. Stationery Office. In the following remarks, I propose briefly to touch upon those changes which have occurred during the past three years, and which call for some modification of our agency and distribution methods. For the sake of clarity and ready reference I will deal individually with the special requirements of the principal trades.

The Textile Trades.—The textile trade in India, just as in the United Kingdom, is the best organised of all trades. The largest and most powerful import merchants, both European and Indian, possess special piece-goods departments with a trained staff, and in many cases devote their whole energies to the trade. The Indian guarantee brokers and dealers in the principal ports are the wealthiest and soundest of their class, and a highly specialised organisation has been built up extending from the purchase of the goods in Manchester and elsewhere to the final distribution in the villages of India. Broadly speaking, therefore, the selling organisation which has been evolved is probably the one best suited to India's requirements.

The recent slump with its concomitant in India of wholesale repudiation of liabilities and dishonouring of drafts has, however, most seriously affected the direct trade between British shippers and Indian importers which had been growing steadily for some

years, and the inevitable result is a strong reaction on the part of many British exporting houses against direct dealings with the bazaar and a tendency towards reverting to the large importers at the ports.

As I stated last year, I am convinced that this direct business has contributed materially to the expansion of British trade, notably in Bombay and the inland distributing centres of Delhi, Amritsar and Cawnpore. If carefully conducted on sound lines and with responsible Indian dealers, it is—in normal times—a reasonably safe trade, particularly in those cases where the home shipper employs a resident representative in India to safeguard his interests. At all events it is known that those firms who have conducted it, in some cases for the last 25 years, have found it to be a lucrative one and have made very few bad debts. Moreover, the records of the exchange banks would show that in normal times their overdue bills represented a very small proportion, and these were almost always met after an extension. On the other hand the European merchants at the ports are—for obvious reasons—opposed to this direct business. The wholesale repudiation of contracts and the apparent collapse of Indian commercial morality during the past two years has been most evident in those centres, such as Bombay and Delhi, where the most liberal trading facilities had been granted to Indian importers and bazaar dealers. As a result, British shippers have in some instances been forced into liquidation, in others are financially crippled for some years to come, and, in almost every case, have suffered very severe losses through no fault of their own. It is not to be wondered at, therefore, that many of them aver that they will close their mofussil accounts in future and will trade only with old-established houses in the ports; while others will only accept new business from a very few approved firms with a 25 per cent. margin with the order.

We are still too near the recent crisis to be able to consider it calmly and dispassionately. It will be admitted, however, that the upheaval cannot be classed with any other previous trade slump. Although no one could describe the action of the Indian dealers as following the accepted principles of commercial morality and good faith, it must be conceded that a great many of them could not possibly have met the loss of some 60 to 70 per cent. on their goods with which they were faced owing to the slump both in the market value and in exchange. The great mistake they made was that instead of placing their position candidly before their suppliers and asking for assistance—whether in the form of compassionate allowances or extended credit—they were led away into passing resolutions refusing to pay their bills at a rate below 2*s*., and clutching at any political straw which they thought might help them to evade their responsibilities. On the other hand, Manchester shippers at first did not clearly grasp the desperate nature of the recent slump and hoped that, by showing a determined front and insisting on the fulfilment of engagements

and the honouring of drafts, they would force the dealers into a more reasonable frame of mind. The Chairman of the Delhi Piece Goods Association voiced the feelings of the importers in Delhi when in a recent speech, he said :—

"It is unfortunate that our appeals and warnings fell altogether flat on Indian dealers on the one side and Manchester shippers on the other. If they had listened to us in time, matters would not have led to such a mess. Last year when we entreated, requested, urged and cajoled our constituents at either end ours was a cry in the wilderness. Hard facts with all their grim realities have borne us out. Although our efforts did not bring about the desired effect immediately, yet it is satisfactory to find our friends acting up to our suggestions, are settling their differences amicably."

After commenting on the improved conditions and expressing the opinion that, given a good monsoon and no further political upheaval, it should be possible to clear up all outstanding accounts within the next months, he adds :—

"I think everyone will admit that shippers on the whole have acted in a very magnanimous way towards importers here by making large concessions and helping in every possible manner, their object being not to break anyone."

The prospects for a steady improvement are undoubtedly brighter, the first monsoon forecast is a favourable one, and—given a continuation of the present slightly more settled political situation—it is quite likely that by the end of the year the old outstandings will have been liquidated. For the present, however, it would be unwise to accept forward indents from other than selected dealers of proved honesty except against a 25 per cent. margin with the order and on D/P terms.

Iron and Steel.—The recommendations made in 1919 still hold good, and may be summarised as follows :—

(*a*) British steel producers who have in the past conducted a large and steady trade with India in the staple lines of steel rails, sheets and plates, bars and channels, angles and springs, beams, tubes, hoops and strips, cast pipes and fittings, &c., &c., whether for the use of Government works or for the industrial requirements of the country, should take steps to form one or more export selling organisations of non-competing manufacturers, and should open their own offices in Calcutta and Bombay for the sale of their products, from stock in the case of articles in constant demand. Only by this means will they be able to meet the enhanced competition from the United States, and also secure their fair share of Government orders. Combinations and amalgamations among steel producers are the order of the day throughout the world, and a necessary corollary is the forming of such organisations for selling purposes. For instance, it would almost certainly pay a large manufacturer of galvanised steel sheets (of which, in 1913, no less than 275,000 tons of a total import of 278,000 tons were obtained from the United Kingdom) to combine with manufacturers of steel rails, tubes, hoops, tinned plates, and other products in steady demand, to provide for specialisation of manufacture in the group and a rigid allocation of orders, and then to open their offices in India, staffed with expert salesmen, combining, if possible, a knowledge of the works with acquaintance with local conditions.

(*b*) The smaller manufacturer of standardised lines such as tees and angles, bars and channels, spring steel, &c., would probably be well advised to continue to deal with the many old-established London and Glasgow metal exporters, who usually have connections in the principal Indian centres and who would be able to amalgamate the multiplicity of small bazaar indents into one substantial order, and would furnish cash against documents in London.

(*c*) The British metal export merchant with an established trade with the Indian bazaars would do well to maintain a resident representative on the spot. The tendency all over India is for the buyer to prefer to have personal dealings with the actual seller rather than to conduct his business by letter or cable with a buying agent in the United Kingdom. This tendency is particularly marked in Bombay. The representative should be kept posted by cable with current prices, market conditions, &c., &c., and should be authorised to make direct sales in the bazaar.

(*d*) The higher-grade Sheffield specialities such as high-speed and tool steels, files, &c. require special treatment. In this case, inasmuch as most Sheffield makers produce the whole range of these articles, group-selling would be found to present difficulties. The best method would be to appoint an active firm of import merchants to act as sole agents in each of the following territories: Calcutta, to cover Bengal, Bihar and Orissa, United Provinces and Assam; Bombay, to work the Bombay Presidency, Sind and the Punjab; Madras, to cover Southern India; and Rangoon, for the whole of Burma. There are one or two progressive merchant firms who have branches in all or most of these centres, and maintain an active selling organisation with travelling salesmen throughout the whole of India. In these cases, where manufacturers can satisfy themselves that their goods will be actively pushed, they would probably be well advised to appoint a sole agent for India. Distributors with the necessary staff and organisation adequately to cover the whole of India are, however, few and far between. Their names, and also the names of the leading steel importers at the various ports, together with particulars as to their standing, organisation, agencies held and agencies desired, usual terms, &c., &c., may be obtained from the Department of Overseas Trade, 35, Old Queen Street, S.W.1. In addition to appointing agents, it would be well for a representative of the firm to visit India at least every second year, and preferably each cold weather, so that the manufacturer should be *au courant* with the conditions of the market. The frequent visits of a representative would also probably prevent any relaxation of effort on the part of the agents and would tend to keep their organisation up to the mark.

The advantages to a large manufacturer of merchant steel of all kinds of allying with a firm of engineers on the spot has been proved during the past year in the case of more than one large steel contract which has been secured by the United Kingdom in face of most severe competition. By this means the steelmaster has had the advantage of the experience and influence of an established firm in India, which has also been able to undertake erection and quote for the whole contract.

Machinery.—In view of the value of the Indian market for machinery and plant, the question of representation is a most vital one for the British manufacturer. The imports last year reached a total of £23,000,000, of which nearly £19,000,000 worth was obtained from the United Kingdom. In my 1919 report, I gave specific advice under each heading of machinery, but on this occasion I will merely reiterate my opinion that those British engineering manufacturers who already have a large interest in

the market should open their own office and selling organisation on the field in those cases where the trade to be gained warrants the expense, and in other cases they should form group-selling organisations in conjunction with other manufacturers of non-competing lines, and the group association should open its own offices in Calcutta and/or Bombay as circumstances direct. The following are a few of the reasons on which this opinion is based :—

(*a*) The firms of mercantile agents in India, who have in the past held many of the leading machinery agencies, are usually houses of standing who hold the agency of some 10 to 30 British manufacturers of various lines. They frequently act as piece-goods importers, shipping and insurance agents, exporters of all kinds of produce, managing agents of local industries, and conduct a general merchant's business. The numerous machinery agencies are, therefore, relegated to an engineering department staffed by two or three European assistants, with sometimes a qualified mechanical engineer in charge. It is obvious that, with the best will in the world, it is impossible for such a firm to do adequate justice to each of the agencies held. Active selling campaigns by travelling salesmen covering the whole territory are practically unknown and, in a great many cases, catalogues of principals are merely filed for reference and, whenever an inquiry is received for the specific machine, attention is given to the matter. It should not be thought that I under-rate the value of a merchant's experience and connections, or that I do not realise that our trade in India has been largely built up by the fine old houses in the ports. I do contend, however, that in the case of machinery in general demand in India the ideal method of representation, from the British Manufacturers point of view, is to have his own office staffed with competent engineers and salesman and—in the case of heavy plant—provided with an expert staff of erectors. There are, of course, a few firms who specialise in conducting machinery business and who give their principals good service. In these cases, I would recommend that the British manufacturing engineer should attach one of his own men to his agents, to assist them by travelling the country, demonstrating the value of the machines, putting right defects in previous deliveries, advising probable purchasers, and generally promoting his employers' interests.

(*b*) The tendency of government towards the purchase of plant in India is dealt with at length in Chapter III pages 88 to 103. The Government of India is anxious to encourage manufacturers to erect branch works in India and has already decided to call for simultaneous tenders in India and Europe. In these circumstances, firms can no longer rely on securing all orders from the India Office Stores Department and although it may not be practicable in many cases to manufacture in the country, the fact that they have a branch office will not debar them from tendering locally—in fact will give them a decided advantage with the Indian Stores Department. Moreover, it is likely that much wider powers will be exercised by the Government of India as regards purchasing from stocks in the country, and many British machinists have found it to be imperative that they should hold large stocks of, say, machine tools which they find little difficulty in disposing of to railway workshops and other bodies, who usually come into the market towards the close of the financial year.

(*c*) The Indian industrialist to-day, however, is branching out into many highly complex industries, and is determined to have the most highly scientific advice and to purchase the latest and most improved forms of plant which are obtainable. There are very few firms of consulting engineers in India to-day. The trained managers of the branch offices of home engineering and machinery firms have, in the past, filled this gap and have rendered, gratuitously, invaluable services to Indian industrialists. This help will be required more than ever in the future,

and the manufacturer who is prepared to advise his client on the spot as to the layout of a scheme, to draw up specifications, and to furnish the fullest technical information, will have, as a rule, the first call on an order, irrespective of whether that order is placed locally with him, or in London direct with the works. The leading industrial houses particularly in Calcutta, usually employ a trained engineer to look after this side of their development, but he cannot possibly have first-rate knowledge on all the branches of industrial engineering, and I have frequently been requested by these gentlemen to bring to the attention of British manufacuring engineers the great advantages they would gain by maintaining a technical staff in India who would be in a position to give prospective buyers the benefit of the most modern and scientific knowledge with regard to processes and plant, and who could provide them with the necessary drawings and specifications. The firm which is prepared to render these services and secure the friendship and goodwill of the buyer's engineer, will be placed in an impregnable position compared with their competitors who either remain in England or are represented in India by mercantile agents with little or no technical knowledge of the specific plant or machinery. Government Officers have frequently complained to me that they have purchased plant from mercantile agents, and then, when it has got out of order, they have applied to the agents for assistance, but have not received any satisfaction, with the result that their future indents have been placed elsewhere.

(*d*) In the case of large plant, such as watertube boilers, waterworks and pumping installations, electrical and steam-power plants, pipelines, electric cables, and complete installations of industrial machinery such as flour-mills, rice-mills, oil-mills, sugar-refineries, chemical works and by-products plants, etc., the necessity for economical and efficient erection is paramount in a country with peculiar climatic and other conditions such as India. Considerable waste of money and dissatisfaction has been caused in the past in cases where machinery has been purchased in London by officials and merchants with little knowledge of local conditions and where mistakes have been made both in the design of the plant and also in the erection of it. It must always be remembered that, speaking generally, engineers in this country, whether they be in Government, municipal or private employ, are mainly occupied with administration and maintenance work, and are, therefore, usually out of touch with the latest home engineering practice. Indian labour is also, comparatively speaking, unskilled, and requires constant and expert supervision. The British manufacturer, therefore, who is prepared to maintain an erecting staff in conjunction with his selling and technical organisation in India will not only be placed in a strong position *vis-à-vis* his competitors in the securing of orders, but will be able to effect considerable economy and give satisfaction to the purchaser by quoting for the complete plant, erected and in running order, thereby making an efficient job and establishing his position for renewals and further extensions.

(*e*) Foreign competition has to be considered much more carefully to-day than before the War. Last year the United States supplied 13 per cent. and Germany 1½ per cent. of India's imports of machinery and millwork. American firms, having secured a footing during the war, are leaving no stone unturned in their efforts to build up a business, particularly in those lines in which they specialise, such as logging plant and sawmilling machinery, sugar machinery, electric plant and equipment of all kinds, agricultural machinery and implements, steel rolling mill plant, mining machinery and tools, excavating and oil-crushing plant and machine tools. American firms in many instances are not only sending salesmen to India, but I have met several instances where highly experienced engineers have spent months in advising Government officers and private purchasers as to how to overcome their difficulties and in helping them to decide the type of plant they really require. Moreover, Parsee and Indian buyers, owing to our enforced inactivity during the war, are now looking more

and more to the United States to supply their requirements and are, in some cases, apt to imagine that America leads the world in machinery production—an erroneous idea which the American engineers and travelling salesmen are only too anxious to foster. The influence of the American consulting engineers to the Tata industrial group has been enormous. Not only the steel works plant at Jemshedpur but also the machinery required for the surrounding subsidiaries such as the tin plate mills, steel wire drawing plant, and agricultural implement factory is almost entirely of American origin, as also is a very large proportion of the hydro-electric plant on the Bombay side and the oil-crushing machinery at Ernakulam near Cochin.

(*f*) Lastly, we have the unquestionable fact that at least a score of the leading British manufacturing engineers have had their own branches in India for many years, and, having tried both the agency and the branch systems, have decided that the latter is by far the most satisfactory. In more than one case, I have seen the actual figures of annual turnover both during the agency period and since the work was done by a branch office, and in more than one case the turnover has been quadrupled in the short space of three years and the nett profit has been in close proportion.

Of course, in a very great many instances, the demand in India for a particular type of machine would neither justify the expense of opening a branch office nor the appointment of a specialist to be attached to the mercantile agents. In such cases home firms would do well to consider the appointment as their agents of another firm of British manufacturing engineers who have a branch in the country. Most of these branches know exactly what is wanted; their time is not taken up with extraneous matters as in the case of many merchant firms, and they are constantly covering the country with salesmen, who are themselves engineers, rather than waiting until orders come to them. Many of them would be willing to negotiate for agencies of non-competing and complementary lines, and I would strongly recommend firms, who may be interested in this suggestion, to communicate with me and I shall be glad to place them in touch with suitable people.

Mill and Engineering Stores.—The trade in mill and engineering stores for the jute and cotton mills, engineering works, collieries, and the various other industries of all kinds which are springing up in India is already of considerable dimensions, and is certain to increase materially in future. A very large proportion of the requirements of these industries, particularly in Bengal, where the firms of managing agents are usually British, is purchased through the London and Glasgow offices of the managing agents, and this largely accounts for the predominant position of British suppliers in the trade before the war. During the war years, however, when priority certificates were difficult to obtain for the supply of these articles from the United Kingdom, buyers have been obliged to indent from the United States and Japan, with the result that there has been a tendency to purchase in Calcutta, Bombay, and other large centres, from local merchants who specialise on this type of business and are able to sell from stock. Several new merchant houses of good standing have been established in India during the past few years, with the express object of catering for this trade. As a rule, agencies for manufacturers of such articles as paints, belting of all kinds, wire ropes, packings, high-speed steel and Sheffield specialities, tools, oils, chemicals, &c., are held by them. They frequently buy outright for their own account and resell from stock, the trade being financed either by cash against documents in London, or by 30, 60 or 90 days' sight drafts, documents against payment. The

trade is a well-organised and satisfactory one, and it is hoped that British manufacturers who have not already done so, will take steps to place themselves in touch with reliable merchant firms engaged in this trade in India. Suitable names, together with further particulars, may be obtained from the Department of Overseas Trade.

Liquors and Provisions.—The distribution of both liquors and provisions is largely in the hands of powerful merchant importers in the principal ports who buy outright for their own account, and, in addition, frequently hold agencies for leading British, French and American firms. They act as catering contractors to railways, hotels, clubs, and messes, supply retail to the European community, and wholesale to the bazaar dealers for the Indian demand.

In addition, there are one or two firms of commission indent merchants in each port, who specialise on the bazaar trade. Indents are collected by their brokers and are then sent home for execution, the importing merchant usually retaining a commission of 2½ per cent. for his services. The drafts are either drawn on him direct or else on the bazaar dealer with the importer as a "case of need." These merchants also accept agencies for British manufacturers and well-known exporters, usually on a 5 per cent. commission basis.

One or two of the leading distillers and wine and spirit factors also have their own depôts in Calcutta and Bombay, from whence they supply the wholesale trade only. Other exporters, both of liquors and provisions, whose brands are well-known in the market, do not confine their sales to any one firm of agents, but accept indents from all sources and are often willing to draw on the leading bazaar dealers as well as on the European firms. In the case of small Indian dealers, however, they find it safer to insist on their indents being transmitted through a reputable European house, who will act as a "case of need." Travellers are sent out to India each cold weather, who visit all purchasers, effect sales, investigate complaints and such questions as infringements of trade marks, show new brands, and return home in the summer to report to their principals on the state of the market, changes in demand, and the financial status of their various clients. This is, undoubtedly, the most satisfactory form of representation in the case of established and well-known brands.

My advice to British exporters of wines, spirits and provisions, who have hitherto not had experience of the market, would be, firstly, to place themselves in touch with the London houses of the leading importing firms in India in order to learn whether their goods are saleable in this market. This should be followed up by sending out ranges of samples with full information and c.i.f. prices in sterling, the goods being made up and packed in accordance with the views of the importers. A detailed report having been received from India, the exporter could then consider whether he should appoint importing firms as his sole agents for the different markets, or whether he should sell in the open market and rely upon his own travellers to look after his interests. If the goods are novelties or are articles which are likely to find a very wide sale, the latter method would probably be the more advantageous. On the other hand, if the line is an ordinary one, he would probably be well-advised to appoint leading importers in each centre as sole agents. He will also find that the larger and more influential importers will naturally not go to the trouble and expense of introducing new brands unless they are recompensed by a sole agency agreement for a term of years. In the case of manufacturers of well-known brands, who produce both the high qualities for the European demand and also the lower-priced grades for bazaar requirements, it may be desirable to divide the agency on these lines, and to appoint a leading firm of European retailers for the superior brands, and a commission indent house for the bazaar trade. In any case, it is always advisable, after the goods have been placed on the market, to send out a travelling representative to report on the conditions and to conduct general propaganda work.

Hardware.—In considering the methods of representation best suited to a widely-diversified trade, such as hardware, it should be borne in mind that in India there are two separate and distinct types of demand. There is firstly the demand from the relatively small European and wealthy Indian communities, the large industries, railways, collieries and estates, which usually consume the higher grade articles. Secondly, there is the enormous demand from Indian dealers for distribution throughout the bazaars and villages of India known as the " bazaar " trade. In this trade cheapness and a showy outside appearance are generally far more important than quality and durability, and consequently the demand is usually for the lower qualities.

The purchases of the first class of goods are usually made in London and Birmingham by the home offices of the managing agents of industries, railways, collieries, and estates, by the home offices of the large hardware stores in Calcutta, Bombay, Madras, and elsewhere and by the home offices of the several departmental stores which are to be found in the larger Indian towns with a European population. British manufacturers should place themselves in touch with these concerns in London, Birmingham, and elsewhere, and a list of the principal of them can be obtained from the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1, or by consulting any general work of reference such as the *Mercantile Year Book*. In the case of specialities, they would do well to appoint one of the firms of hardware merchants in India as their agents, and in those instances where the expense would be warranted, they would be well advised to send a travelling representative to India each cold weather.

The bazaar trade is catered for firstly by the commission indent merchants, whose head offices are usually in London, Glasgow, Liverpool or Birmingham, and who operate branches in Calcutta, Bombay, and other leading centres. I dealt with this type of trade so fully three years ago that I cannot do better than quote my previous remarks.

" It is a notable fact that there are in India remarkably few British merchant houses who devote their attention to the bazaar trade. This is largely due to the fact that the wealthier and more powerful houses have found their managing agency, shipping, insurance and piece-goods business so profitable that they have not cared to spend time and trouble over a trade which involves such an immense amount of detail work. The result is that, with one or two exceptions, the business is in the hands of smaller firms. The method adopted is to canvass the bazaars daily by means of Indian brokers and, in the case of one or two of the more enterprising firms, by European representatives. Indents are collected for a variety of articles, usually on a 2½, 3½ or 5 per cent. commission basis, according to the class of goods and the risk involved. These indents are then forwarded either to the firm's London, Liverpool, or Glasgow house, or else to their buying agents in the United Kingdom. The home firm then makes contracts with British manufacturers, pays cash for the goods, and either draws on its Indian branch or client for the value, or else finances the shipment by direct drafts on the Indian dealer with its own branch or clients as a 'case of need.' There is, in addition, a large and growing direct

trade between home export merchants and bazaar dealers, the only intermediary being an individual agent or travelling representative in India of the shipper. In some cases, British export merchants ship direct to the bazaar dealers against their indents without any intermediary at all, the drafts being negotiated by, and the goods consigned through, the medium of the exchange banks. There is, however, considerable risk attaching to this business, except in the case of the best dealers, and, therefore, it is not a method to be recommended unless the greatest caution be exercised. Manufacturers desirous of entering the business are advised to place themselves in touch with the home offices or buying agents of the importing houses in Calcutta, Bombay, Karachi, Madras and Rangoon, or they may prefer to correspond direct with the importer on the field in those cases where they are prepared to draw on him. They should be prepared to sample freely, and to follow the desires of the market where reasonably possible. Very small orders will frequently have to be accepted at first; but, once a trade is established, the aggregate of these should amount to a considerable value. Once a name has been established for his goods, the manufacturer should follow this up by sending a travelling representative to India each cold weather, who would visit all clients, whether European or bazaar firms, would investigate complaints and claims, would show new ranges of specialities and book orders on them, on the understanding that the indents should be passed through the usual importing houses on the usual terms, and who would be able to advise his principal each year of any changes in styles, designs, fashions or make-up, and also of financial conditions in the market. Severe foreign competition will be met from America in hardware, provisions, &c., and from Japan in practically every line of trade; but a steady and lucrative business awaits the firm which manufactures the right article at a competitive price, which is willing to take trouble, and is prepared to wait until the results of its missionary efforts are apparent."

Crisis in the Bazaar Trade.—The upheaval in credit conditions on account of the repudiation of liabilities by Indian dealers applies to this miscellaneous trade just as much as to the textile trades, the conditions in which have already been described. The principal commission indent houses in India have received a blow from which it will take them some time to recover. Other London export merchants,, who have carried on a large direct trade with the bazaars have been forced into liquidation and most shippers are—as one of them recently expressed it—" licking their wounds."

As in the case of piece goods, the result is a strong aversion from accepting new business on the old terms and general shippers are only taking indents from approved dealers and even then are, in many cases, insisting upon a margin with the order. The weakening of the position of many of the old commission indent houses and the elimination of a few of them is greatly to be regretted. They performed a very useful function and relieved the British manufacturer of a great deal of risk and trouble. It is to be hoped that more of the London export merchants, who have, in the past, specialised on the Indian market and understand its conditions and requirements, will open branches of their own in India and so conduct their business with the advantage of an organisation in close touch with the buyers, which can watch credit conditions and minimise the risks attendant on this trade. A few of them have been established in

India for some years and have conducted a steady lucrative trade. In view of the present position, I hope that more will follow their example as I feel sure that, carefully conducted, with experienced men on the spot, the bazaar trade can be made profitable alike to the merchant and to the manufacturer, who caters for it.

CHAPTER V.

GENERAL SURVEY OF INDUSTRIAL CONDITIONS IN INDIA WITH SOME ACCOUNT OF GOVERNMENT ACTIVITIES IN STIMULATING INDUSTRY.

General Remarks.—The past year has been a very difficult one for most Indian industries, which have suffered acutely from the world-wide depression. With the exception of the cotton industry, which has enjoyed an unparalleled period of prosperity owing to the increasing demand for swadeshi goods as a result of the Gandhi boycott, and the high prices of imported fabrics, most of the concerns which were floated in India during the boom of 1919/20 have had a very poor year, and there have been many liquidations. On the whole, however, it must be admitted that Indian industries have stood the strain fairly well. The number of joint stock companies which have been liquidated during the twelve months April 1921 to March 1922 was 254, with an aggregate authorised capital of 25,36 lakhs (say, £16,900,000), and of this total about 10,00 lakhs consisted of banking, insurance and navigation companies, whose future was doubtful from the outset. As I stated last year, it will probably be found that the recent setback has been merely a temporary one, and that after the recent drastic pruning of the less sound and efficiently-managed companies, the majority of the new industries will go ahead with profit to themselves and great advantage to the country as a whole. We will now briefly consider the position and prospects of each of the main groups.

The Cotton Industry.—The period of general prosperity which set in towards the close of the War continued during 1921. As the Chairman of the Bombay Millowners' Association stated in his annual address on March 27th, 1922 :—

" From a manufacturing point of view the period has been one of continued prosperity, both spinning and weaving having been fully engaged, though bleaching and dyeing, following the popular clamour for plain goods consequent upon 'Swadeshi' and other political circles, has had but a poor trading time. I estimate the profits of the Bombay cotton mills to be about 30 per cent. to 35 per cent. less than they were for the previous year, when margins reached their zenith. On these results I think we can congratulate ourselves, especially as the textile industry in almost every other country in the world has been passing through a period of acute depression. We are, of course, sure to have our cycles of bad times, but I am fully confident that we are now in a position to cope with them, and though indications are, at the moment, not wanting that margins of profit may not be so large as before, I consider that the industry will more than hold its own for years to come and still show a reasonable return to those who have faith to invest and work in it. Little or no expansion

of factories has taken place, due to the continued high cost of machinery and the difficulty of housing labour, and, as you will see from our report, only some 60,000 spindles and 2,000 looms have been added in Bombay island. Our average hands employed daily total some 147,000, and when we consider their dependents one must realise how much the progress and prosperity of Bombay is bound up with the success of the textile industry."

One must agree with the Chairman that the present strength of the Indian textile industry is largely attributable to the careful and conservative policy adopted during the past few years. Re-capitalisation, which was resorted to in Lancashire on such a large scale, has, with one or two exceptions been absent. On the other hand, substantial reserves have been built up and renewals of machinery and improvements in housing and welfare work have been made out of the profits realised during the boom period. I would refer my readers to the pages of " Capital " for a complete record of the position of practically every mill in India. *An analysis of the dividends paid by* 35 *leading Bombay mills in* 1921 *shows an average rate of distribution of* 59 *per cent.*

Labour Conditions.—While there were isolated strikes and disputes in Madras and other centres in India, labour on the whole appears to have settled down during the year and there was no general strike of operatives in Bombay. Rates of wages were maintained at about 100 per cent. above pre-war levels, while statistics, compiled by the Director of the Bombay Labour Bureau, show that the cost of living fluctuated between 60 and 85 per cent. above the figures for July, 1914. Much more is now being done to improve the conditions of life of the operatives. The housing problem is being taken in hand by the Bombay Government with characteristic energy, and 95 chawls of 80 tenements (or 7,600 tenements in all) are reported to be in course of construction. The new Indian Factories Amendment Bill comes into force on July 1st, 1922, and provides for an eleven hours day and sixty hours week. The Millowners' Association passed a resolution last year only to work one shift per day on account of the present housing shortage in Bombay: this has been loyally adhered to by the mills.

There were no violent fluctuations in cloth rates during the year. Quotations for grey longcloth were Rs.1/12 per lb. at the commencement of 1921. They declined in sympathy with cotton and yarn rates until the lowest point of Rs.1/7 was reached in March. Thereafter conditions improved and at the close of the year the price was Rs.1/10 per lb.

Mention should be made of the effects of the boycott of imported and mill-made piece goods inaugurated by Mr. Gandhi in August, 1921. A strong movement towards the use of " swadeshi " cloth had been in existence for some time, but Mr. Gandhi's activities gave it fresh vigour. The demand for khaddar cloth (that is cloth handspun and hand woven from Indian cotton) could not be met and resulted in an increased

demand for the coarser kinds of cloth woven by the mills. In August, the rates for khaddar cloth rose from 13-14 annas to Rs.1/2 per lb. This movement had an adverse effect on the sale of unbleached fancy goods which are usually in demand from the month of August to the end of the cold season. Bleached fancy goods were also affected, though not to the same extent.

The Coal Position.—The Bombay Millowners Association Report states that the supplies of coal gave cause for anxiety in certain months of the year. Owing to the continued short supply of waggons, mill stocks became seriously depleted by the end of February and industries in Bombay were advised to bring their coal by the sea route, arrangements being made for the issue of licences by the Customs authorities at Calcutta and Bombay. From May onwards coal continued to arrive by this route, the cost, c.i.f. Bombay being about Rs.30. To this had to be added the charges in connection with the landing of the coal from the steamer, which, during the monsoon months, went up to as much as Rs.7-8 per ton. From June some coal was also imported from Africa, though the cost was high, about Rs.40, c.i.f. From September to the end of the year English coal continued to come in at better rates (Rs.35-36 c.i.f.)and had it not been for its arrival Bombay would have experienced a very serious coal shortage. During May, 1921, Bengal good second class coal was quoted in Bombay at more than Rs.47 per ton for ready delivery.

Statistics of the Industry.—The number of spindles in all India at the end of August, 1921, was 6,870,804 as compared with 6,778,895 at the beginning of the war in 1914 and 60,053,246 at present in the United Kingdom. The number of looms was 123,783 as compared with 104,179, in 1914 and 790,399 at present in the United Kingdom.

The number of mills, spindles and looms, the average number of hands employed daily, and the approximate quantity of cotton consumed in all India for the year ending 30th June, 1921, were as follows :—

Number of Mills	257
,, Spindles	6,870,804
,, Looms	123,783
Average number of Hands employed daily	332,179
Approximate Quantity of Cotton consumed	7,420,805 cwts. 2,120,230 bales of 392 lbs.

Below is a statement of cotton consumption, yarn and cloth production in India during the 12 months ending 31st March, 1921 :—

Cotton :	
Mill Consumption*	7,420,805 cwts.
F.-P. Bales of 3¼ cwts. each	2,120,230
Yarn :	
Production	5,892,880 cwts.
Bales of 400 lbs. each	1,650,006
Cloth :	
Production	1,580,849,746 yards 367,481,791 lbs.

* Year ending 31st August.

The following table shows the number of pounds of yarn produced in India per spindle in position during the last 3 years, which is a fairly good index of the steadiness with which the spindles have been worked, and the prosperity or depression of the industry.

Years.	Spindles in position.	Yarn produced.	Pounds per spindle.
		Cwts.	
1919	6,689,680	5,491,432	91·93
1920	6,763,076	5,676,430	94·00
1921	6,870,804	5,892,880	96·05

The Jute Industry.—Although the jute industry has experienced the world-wide depression in common with other industries in the country, the strong financial position of the companies and the cautious policy of the management have minimised its effects from the shareholders point of view. The mills have worked only 4 days per week most of the year and this checked any tendency towards overproduction and prevented a world-wide collapse in the prices of both cloth and gunnies. A shortage in the next season's jute crop is expected and this has caused strong speculation in the raw material and a boom in jute mill shares.

The Tea Industry.—After the serious depression of 1920, the tea industry made a rapid recovery in 1921 and most of the Companies are now returning to a paying basis. For full particulars with regard to each concern, I could refer my readers to the pages of " Capital " and to the Investor's Indian Year Book 1921, published by Messrs. Place, Siddons and Gough, Stock and Share Brokers, 1 Commercial Buildings, Calcutta.

The Coal Industry.—The following statement showing the output of coal in the various provinces of British India during 1920 and 1921 has been issued by the Director of Statistics from figures supplied by the Chief Inspector of Mines in advance of his annual report.

——	1920.	1921.	Increase (+) or decrease (—) in 1921 as compared with 1920.
	Tons.	Tons.	
Assam	324,965	312,022	— 12,943
Baluchistan	27,672	42,155	+ 14,483
Bengal	4,207,452	4,259,642	+ 52,190
Bihar and Orissa... ...	11,973,339	12,964,659	+ 991,320
Burma	—	300	+ 300
Central Provinces ...	491,205	712,914	+ 221,709
Punjab	58,078	67,242	+ 9,164
Total	17,082,711	18,358,934	+ 1,276,223

Considerable surprise has been evinced among mining circles in India that there should have been an increase of 1¼ million tons during a year when it was generally believed that the raisings had not been so good and when there had been no abatement of the transport difficulties. There is no doubt that India is not producing sufficient coal for her industries owing to a variety of reasons, the principal of which are (1) the reduction of output as a direct result of increased wages and (2) shortage of waggons, lack of siding accommodation and general transport difficulties. The first cause will be an extremely difficult one to remedy, as it has been found that increased earnings were not used by the workers to improve their conditions of life, but were merely an incentive to increasing idleness. The railway difficulties will probably be removed during the next few years now that the railways are committed to a large capital expenditure programme, much of which will be utilized for the rehabilitation of rolling stock and the supply of sidings and extra marshalling facilities. *In the meantime there is a great opportunity for the British coal exporter, particularly in Bombay, Karachi and Rangoon.*

I am indebted to the Director of Statistics for the following figures relating to production, imports, exports, freights and prices of coal in 1921.

	Tons.
(1) Production of coal in British India in 1921 under the Indian Mines Act	18,358,934
(2) Imports by sea into British India of foreign coal (including coke and patent fuel) during 1921. (Private merchandise only.)	1,090,749
(3) Imports by sea into British India of foreign coal (including coke and patent fuel) for Government Stores during 1921	209,007
(4) Re-exports of foreign coal (including coke and patent fuel) during 1921. (Private merchandise only.)	2,281
(5) Exports of Indian coal (including coke and patent fuel) to foreign ports during 1921. (Private merchandise only.)	275,571
(6) Exports of coal (including coke and patent fuel) for Government Stores during 1921	24,220
(7) Exports of bunker coal during 1921	1,586,156

			Rs.	as.	p.
(8) Average rates of freight during 1921, per ton of coal by sea from	Calcutta to	Bombay ...	13	13	0
		Madras	8	6	0
		Rangoon ...	8	2	0
		Karachi ...	14	11	6

	Calcutta.	Bombay.		Karachi.
	Deshar-ghur.	Deshar-ghur.	Cardiff.	Indian Coal.
(9) Average prices (per ton) of Indian and Welsh coal at chief ports during 1921.	Rs. as. p. 18 2 8	Rs. as. p. 33 4 0	Rs. as. p. 39 4 0	Rs. as. p. 38 2 0

An interesting development of the year has been the flotation of a company to work the Talcher coalfield in Orissa, which is near the main railway line to Madras, almost on the coast, and in close proximity to the iron ore deposits. Considerable developments have been made in many Indian mines in the installation of mechanical coal cutters, thus tending to offset labour difficulties. The general opinion seems to be that a boom in coal shares is extremely probable and this explains the fact that the shares of most sound companies stand at a higher level of price than would perhaps be justified by their present position.

Flour Mills.—Flour mills throughout India have enjoyed a prosperous year. The price of wheat has been high owing to a short crop in the Punjab, an embargo was imposed on wheat exports, and Australian wheat was imported in fair quantities during the year. The present wheat crop is a very good one, the total production for 1921/22 is estimated at 9,813,000 tons as against 6,706,000 tons, the final estimate of 1920/21. The dividends of the six leading mills average 43 per cent. and the prospects for the present year appear to be good.

Paper Mills.—There have been reduced dividends in the case of the leading mills, probably owing to increased competition from imported paper and to a cautious policy on the part of the management. With the growth of the paper pulp industry in India and the consequent availability of a reliable and cheap source of supply of raw material, the extension of paper manufacture in India would appear to be inevitable.

Iron and Steel and Mineral Production.—In Vol. III of the Report of the East India Railway Committee 1920-21, printed by H.M. Stationery Office for the India Office will be found a statement of the evidence given on Jan. 12th, 1920, at Calcutta before the Indian Railway Committee by representatives of the principal firms engaged in the metallurgical industries of India. This evidence primarily relates to the rolling stock requirements of these companies, but is also interesting as showing the present tonnage produced and the estimated future output of iron and steel when the concerns, at present either under erection or contemplated, are completed.

The present trend of the mineral industry in India is so lucidly described in an article contributed to the Mining Journal, London, by Mr. Cyril Fox, B.Sc., M.I.M.E., an officer of the Geological Survey of India, that I make no apology for including extracts from it here with acknowledgments to the author.

Coal.

The coal industry is, perhaps, the most important of the mineral industries of India. The demand for coal has increased so rapidly of late that some apprehension has been caused by the recent serious decrease in production. The total raisings in 1919 were 22,628,000 tons, whereas the output in 1920 was 18,321,000 tons, and judging by the large quantities of coal which have recently been imported it would seem that there has been no subsequent improvement in the important coalfields.

The chief cause of this diminished output is due to the fewer working hours and disputes over demands for higher wages by the Indian miners. The out-turn per head (above and below ground) had fallen from 111·1 tons in 1919 to 94·4 tons in 1920, and was probably less in 1921. The need of a true mining population is being felt more severely each year as the workings get deeper. The Indian miner of to-day is still an agriculturist, and goes off periodically to attend to his fields. The inadequate railway facilities are another factor; they constitute one of the greatest industrial problems in India. The subject is, however, dealt with later. Although only 1 cwt. of coal is consumed yearly per head of the population much appears to be wasted; nearly 14 per cent. of the total coal raised from the mines is absorbed at the colleries, less than 9 per cent. is at present utilised for metallurgical purposes, 37 per cent. is consumed on Indian railways—and even this large percentage is not enough, as there is a continued use of wood-fuel (215,000 tons in 1920-21) and an increased consumption of oil fuel (63,828 tons, in 1920-21), chiefly on railways in Southern and North-Western India respectively.

Although coalfields or beds of lignite occur in various parts of India—in Assam, in the Darjeeling Himalaya, in Jammu, in the Salt Range, in Baluchistan, Bikanir, Travancore, Madras (Pondicherry), Hyderabad, in several places in the Central Provinces, in Burma, and in the Damuda fields of Bengal and Bihar—nearly 90 per cent. of the output comes from the so-called Bengal coalfields of Jherria, Raniganj, and Giridih. In many of the areas named the local requirements are not met; in others, the coal is unsuitable for the production of coke, and in some cases no serious attempt at mining has yet been made. The great coal region of India lies in the Damuda valley area of Chota-Nagpur and Bengal. In consequence of the cheapness and good quality of this coal this region has rapidly become of great industrial importance. Iron and Steel Works have been and are being established, and other satellite enterprises are growing up in the neighbourhood.

Since January 1920 several important mining enterprises have been registered in India as joint stock companies. The more important concerns are: (1) The Bengal Coke and Coal Products (registered February, 1920, with 25 lakhs of rupees authorised capital). (2) The Karanpura Development Co. (registered July, 1920, with Rs. 40 lakhs authorised capital; there have also been floated no less than twelve Karanpura coal companies, each with Rs. 20,000 authorised capital). (3) The Trans-Adjai Collieries (registered August, 1920, with Rs. 20 lakhs authorised capital). (4) The Lodna Colliery Co. (1920) (registered December, 1920, with Rs. 20 lakhs authorised capital). (5) Coalfields of Burma (registered January, 1921, with Rs. 30 lakhs authorised capital). (6) Talchir Coal Field (registered November, 1921, with Rs. 40 lakhs authorised capital).

It is thus seen that great movements are taking place, as in two cases, the Talchir Coalfield and Coalfields of Burma further away, entirely new areas are being opened up. The importance of developing distant areas cannot be estimated. At present the only good coking coals are obtained from a few of the Damuda coalfields, and much of this valuable fuel is being utilised for purposes in which a non-cokng coal would, perhaps, be more serviceable. However, the need for conservation of this coking coal is fully understood, particularly in view of the great iron and steel industry which is beginning to grow up on the southern borders of this coalfield. The many coalfields of Burma have so far not been seriously touched, although coal is actually transported to places where local coal of good quality could economically displace the imported coal. There are several coalfields in the north-east corner of the Central Provinces which cannot be worked because they have no railway facilities. The lignites of Pondicherry and Travancore and the peat of the Nilgiri hills have almost been forgotten. In these days, when industrial development is starved because of fuel for power purposes, the country's resources and demands for fuel are being carefully studied. The urgent need for better transportation is fully realised, but, to meet the requirements of the country enormous sums of money are necessary.

Iron and Steel.

The iron and steel industry of India is in its infancy. In view of the developments that are taking place, and from a knowledge of the vast deposits of high-grade hematite in the belt of country from Mayurbhanj State westward to the States of Keonjhir and Bonai and the Kolhan sub-division of Singhbhum, this industry must eventually become of very great importance to India. Although much has been written of the Bihar and Orissa iron ores, it is, perhaps, not fully realised how immense are the quantities of available high-grade ore. Both the quality and quantity of hematite in this part of India are calculated to exceed the great American deposits of the Lake Superior region in Minnesota, Wisconsin and Michigan.

Although there are, at present, only two large iron works which are producing iron and steel in India, a third is rapidly being erected and others are projected.

Tata Iron and Steel.—Of the existing companies (1) the Tata Iron and Steel Works are established at Jamshedpur, in Singhbhum (B. & O.), a few miles north of Tatanagar, on the main B. N. Rly. line to Bombay. Originally, this company relied on the iron ores of Gurumashisni (Mayurbhanj State), but the neighbouring deposits of Okampad and Badanpahar are being opened up. They obtain their limestone from Gangpur State, where there are two occurrences, near Panposh and Bisra. Although the quality of this flux is very good, the material is not cheaply obtained. The rock is not quarried, but mined, and, as may be imagined, the limestone question has not yet been satisfactorily solved. Their coke is made from Jherria coal. The production of these works has been (1919-20 exports from Jamshedpur) 50,000 tons pig iron, 75,000 tons of steel rails, and 60,000 tons of bars and girders, valued in all at 5 crores of rupees. Two more blast furnaces capable of producing 1,000 tons of pig iron a day, a new duplex steel plant capable of an outturn of 1,000 tons of ingots a day, and mills for plate, sheet, bars, and rail and structural work, have been erected, and are practically ready for blowing-in and working.

To utilise the finished iron and steel products of their mills a number of subsidiary companies are being established at Jamshedpur: the Calcutta Monifieth Works, for the manufacture of machinery for the jute industry; the Enamelled Ironware, Ltd., for the manufacture of domestic utensils and other types of goods; the Tinplate Company of India; the Agricultural Implements Co.; the Indian Steel Wire Products, Ltd.; the Enfield Cables Co.; and the Hume Pipe and Construction Co.

(2) *The Bengal Iron Co., Ltd.* have their headquarters at Kulti on the Bengal side of the Barakar river. They obtain their iron ores from North-West Kolhan (a sub-division of Singhbhum) and Keonjhir State. The coke is made from Jherria coal and from the company's collieries at Ramnagar, near the works. Most of their limestone comes from Sutna (Rewa State, in Central India), and partly from Bisra. They produce daily about 450 tons of pig iron, but utilise most of this in making castings of special types, chiefly railway sleepers and chairs. It is not clear when this company propose to re-establish their output of ferro-manganese.

(3) *The Indian Iron and Steel Co.* are erecting works at Hirapur, on the railway between Asansol and Adra in Bengal. They will be supplied with iron ore from Gua in Kolhan, along the new railway extension, which leaves the main B. N. Rly. line at Amda and passes through Chaibassa to Jamda. The flux (limestone) is obtained from Gangpur State, and the coke is to be made from the coal of the local fields. At first the company will restrict itself to the production of pig iron, the present plant being designed for a daily output of 600 tons.

In addition to these there are a number of new companies

(4) *The United Steel Corporation of Asia, Ltd.*, was registered in India in December, 1921, with a capital of £10,000,000 by Messrs. Bird & Co., of Calcutta, and Messrs. Cammell Laird, of Sheffield and London. The works are to be erected at Manoharpur. A new railway line is to connect the works northwards, through Hesla, with Hutar and the Karanpura coalfields. The iron ore will come from the Keonjhir-Bonai area, and the limestone, probably, from the Gangpur region. The immediate erection of plant capable of producing 300,000 tons of pig iron and 200,000 tons of finished steel annually is contemplated. This output will later be increased to 700,000 tons of pig iron and 450,000 tons of finished steel. The erection of the works will be carried out in three stages of development, during which the B.N. Rly. will have to provide additional rolling-stock on the following scale: First stage, 492 waggons, with 9 locomotives; second stage, 4,113 waggons, with 74 locomotives; third stage, 7,725 waggons, with 139 locomotives.

(5) *The Eastern Iron Co.* is to be erected in the vicinity of the Jherria coalfields, and will obtain its supplies of ore and flux from much the same localities as the Indian Iron and Steel Co.

(6) *The Kirtyanand Iron & Steel Works*, near Sitarampur, in Bengal, is to be established for the production of iron and steel castings in a smaller way.

When these several companies are in working order they would have a total estimated output of 1,500,000 tons of pig iron and 1,000,000 tons of steel annually. Production on such a scale will result, obviously, in the erection of mills for the out-turn of finished iron and steel materials, such as sheets, plates, bars, joists, etc.

Manganese, Tungsten, Chrome, Tin.

Manganese.—India has peculiar advantages for the production of finished iron and steel on an immense scale. For years she has been one of the largest exporters of manganese ore to Europe. This ore has sometimes been sold for prices which, although more than double the value of the material in India, have barely paid expenses owing to the heavy transport charges. With the erection of steel works in India, a far more advantageous market for Indian manganese ore will be created in that country. The large stocks of manganese ore, which have been accumulating in certain parts of the Central Provinces for several years, cannot be placed on the market owing to the high cost of transportation and an absence of railway facilities. One of the two existing large iron works in India made ferro-manganese for Government purposes during the war, and although they have since discontinued the manufacture of this alloy, it is most probable that the large scale manufacture of this important ingredient for steel making will be re-established.

Tungsten.—In addition to manganese ore large quantities of wolfram or tungsten ore have for the past ten years been shipped to Europe and other countries from Burma. Like manganese ore, the demand for this raw material, wolfram, has depended on the requirements of makers of special steels. The recent dislocation of the iron and steel industry in the United Kingdom which resulted from the coal strike is clearly reflected in the exports of wolfram from Burma. A heavy slump has occurred, and though prospects are now improving every day there is still cause for great anxiety. A steel works for the production of high speed tool steel alloys in India would have very great advantages, but the establishment of such a company is a matter of the future. At present producers of wolfram are burdened with stocks for which there is no demand at reasonable prices.

Chromite.—Although the Indian exports of chromium for 1921 are much less in value than the previous year, the amount produced from the mines is not proportionately less. There has, however, been a diminution in

the quantity exported. The Indian production, obtained chiefly from Baluchistan, Mysore, and, in a small way, from Singhbhaum, is almost entirely exported. Small quantities of high-grade ore have been utilised in the manufacture of chrome chemical compounds, and some experiments have been made with a view to the manufacture of chrome bricks as neutral refractory material for furnaces. However, there is hope that with the manufacturing developments which appear likely to follow the erection of the projected ironworks, the demand in India for such domestic raw materials as chromite, etc., will increase.

Tin.—In spite of the fact that the prices of tin and tin ore have seriously fallen since the boom period of the war the production and export of tin and tin ore from Lower Burma has steadily increased. The erection of a tinplate works at Jamshedpur by the Tinplate Company of India marks a new phase in this branch of industrial development.

Several important firms have established their interests in the tin and wolfram industry of Mergui and Tavoy, and as a result modern methods of mining the mineral veins have been introduced. The hydraulicing of gravels and the dredging of alluvial deposits are being instituted. Up-to-date mills, equipped with elaborate ore-dressing plant, have been erected, and smelting furnaces are in operation.

Gold, Silver, Lead, Zinc, and Copper.

Gold.—The precious metals, gold and silver, have long been regarded as commodities by the people of India, who invariably invest their savings in jewellery and domestic utensils made of gold and silver. Indian merchants frequently fix their own ratio between the values of gold and silver, irrespective of the currency. They regard the coin of the realm as bullion rather than as currency, the imprint of the die being looked upon as an official certificate of the genuineness of the metal. In 1920 the Government of India removed the prohibition against using gold and silver coin otherwise than as coin. The Indian Currency Committee had recommended in 1920 that the rupee should have a fixed exchange value equal to 11·30016 grains of fine gold—that is, one-tenth the gold contents of the sovereign. This ratio has since been adopted, and public sales of gold on this basis have now been permitted. For many years prior to the above-mentioned changes practically all the gold obtained from Indian mines was sold by agreement to the Government of India. This arrangement was discontinued in 1921, and the gold produced in India is now available in the open market.

Gold mining in India, judged by the value of the annual production, which is nearly £2,000,000, ranks second in importance to the coal industry. The yearly production of gold in India has, however, steadily decreased during the past few years. The value, calculated at £4 4s. 11¼d. per fine oz., of the Indian output of gold is estimated at £1,700,000 in 1921, as against £1,900,000 in 1920 and £2,200,000 in 1919.

Silver.—Except for trifling amounts of silver from the Anantapur gold Kolar group of mines in Mysore State. Among the most important of these are the Mysore Gold Mining Co., Ltd., the Champion Reef Gold Mining Co. of India, Ltd., and the Ooregum Gold Mining Co. of India, Ltd.

Silver.—Except for trifling amounts of silver from the Anantapur gold mines in Madras, practically all the silver obtained from mines in India is extracted from the argentiferous galena of the Bawdwin mines of Burma. The output of these mines during the last three years has been:

	Refined lead. (tons.)	Fine silver. (ozs.)
1919	18,535	2,164,854
1920	23,821	2,869,729
1921	33,694	3,827,904

The programme of the output of these mines is based on an annual production of 45,000 tons of refined lead and 4,500,000 ozs. of silver, requiring a daily supply of 700 tons of ore. The proved ore reserve is estimated at 4,000,000 tons assaying 23·3 ozs. of silver per ton, 25·3 per cent. lead, and 17·7 per cent. zinc. This ore-body also contains 300,000 tons of copper ore, assaying 23·2 ozs. of silver per ton, 12·8 per cent. lead, 7·7 per cent. zinc, and 11·0 per cent. copper. The promoters of the company (Burma Corporation, Ltd.) who control the Bawdwin mines, have decided to develop from their existing financial resources, and for this reason have abandoned the projects for erecting zinc works and manufacturing sulphuric acid in India. They have decided not to erect the new lead smelter, and for the time being are not developing the 20-feet seam of good quality lignite which they proved in the Namma coalfield. Their difficulties as regards a suitable ironstone flux for smelting have been satisfactorily solved by the discovery of a large deposit of ironstone near Wetwun. The labour problem, however, yet remains. The local Shans are unsatisfactory, and imported labour is difficult to get cheaply. The Chinese workers from Yunnan have so far not been sufficiently attracted to the mines to settle there; they regularly migrate to their homes each rainy season.

Lead.—There is a considerable demand in India for lead-sheeting for packing purposes, particularly for lining tea-chests. Most of the lead for this purpose is supplied from the Bawdwin mines. Over and above this demand a large amount of Bawdwin lead is exported to foreign countries. The manufacture of red lead, white lead, and other lead pigments has been contemplated, especially in view of the fact that the lead ores occur in association with zinc blende and barytes, both suitable for conversion into excellent paint-making pigment.

Zinc.—The Trade Returns show that 4,000 tons of spelter were exported from India during the year 1921. This metal appears to have been accumulated imported stock, which has now been re-exported. The Bawdwin mines have not yet produced any zinc on an industrial scale. Large quantities of zinc ore, however, are accumulating at Bawdwin. An outlet for this stock will be found when the projected steel works in India erect plant for the manufacture of galvanised iron sheeting. The presence of a large amount of copper ore in the Bawdwin lode naturally suggests the local manufacture of brass and brassware.

Copper.—Although no copper has been produced at Bawdwin for marketing, the prospects for such an output are good. Nearly all the Indian production of copper is obtained from the Rakha Hills mines of the Cape Copper Co., Ltd., in the Province of Bihar and Orissa. The outputs of copper from the workings in 1920 and 1921 were 530 tons and 829 tons respectively of B. S. ingots. The proved ore reserves of these mines are estimated at 300,000 tons of ore, assaying 3·74 per cent. copper. Much development work is being carried out, and further quantities will possibly be proved as a result of the exploratory drivages which are in progress. The Cape Copper Co. have granted a working option of several square miles of their prospecting area to the Cordoba Co., Ltd., who contemplate prospecting the Rakha lode further to the west. There are no important companies in India which manufacture copper goods on an extensive scale, so that much of the copper that is produced is likely to be exported, unless a demand is created.

Mica and Miscellaneous Industries.

Mica.—The mica industry is passing into more and more healthy channels. Since the war the demand for the smaller sizes of mica has continued; consequently there is far less waste at the mines. The manufacture of micanite and various finished articles made of mica has become an established industry in the mica mining area of Chota Nagpur. Further attempts have been made to utilise the large quantities of waste

mica both at the mines and the dumps of the trimming factories. The grinding of Indian muscovite mica to fine powder has so far not proved a commercial success. The exports of Indian mica have for several years been in excess of production, showing that the production of recognised firms working in the area is supplemented by the output of other workers in the mica belt.

Miscellaneous.—The *monazite* sand of the Travancore coast and the occurrences in certain rivers in Upper Burma are receiving attention with a view to steady production. A number of inquiries have been made regarding abrasives such as *corundum, garnet*, etc., but as these substances require crushing and grinding and careful grading for the market, which the small owners are unable to do, the trade has almost ceased. However, with the establishment of suitable plant in India, it is possible that preparation of corundum and garnet for abrasive purposes will once more be revived. Numerous other minerals are being developed. *Asbestos* of good flexibility and long fibre has been found in Chota Nagpur, and is being utilised in a small way. The various occurrences of *graphite* in South India, although producing somewhat impure graphite, have become important in view of the success of the electro-osmosis process in removing the impurities. The discovery of *sillimanite* in large quantities in India has opened a new field in refractory materials, particularly for the glass industry. The occurrence is being exploited, and numerous experiments are being conducted in England with a view to ascertaining the best form in which this mineral can be used.

The expansion of several important companies recently and the appearance of new enterprises indicates activity. A very large *cement* company, the Central Provinces Portland Cement Co., Ltd. (registered in India in 1919 with an authorised capital of 1 crore of rupees), has recently erected its works on the Vindhyan limestone outcrop in the Jabalpur district, and the plant should now be in working order. Another large company, the Katni Electric Cement Works, has been quite recently registered with an authorised capital of 40 lakhs of rupees. The existing cement works, *i.e.*, the Katni Cement and Industrial Co., etc., have not been able to meet the enormous and increasing demand for cement in India.

The manufacture of *refractory materials* for furnaces, e.g., fire-brick, silica-brick, magnesite-brick, and bauxite-brick, etc., is becoming more and more important every year. The Kumardhubi Fire-Brick Works in Chota Nagpur, the Raniganj and Jabalpur Pottery Works, and the new companies now in process of establishing their factories, will not meet the demands of the country. The supply is not nearly adequate enough in special types of refractory materials.

The *chemical industry* is slowly forging ahead in India owing to the vast mineral assets of the country and the steadily increasing demands for chemicals. The *glass industry* has entered on a new phase. Many works are being reorganised, special machinery for making bottles, hollow-ware, sheet and plate glass, etc., are either being installed or are in operation. The question of establishing works for the manufacture of *mineral pigments* for paint-making has been repeatedly considered. Paint works already exist in India, but the scope of their operations is limited to a few varieties of pigments.

A *coal tar refinery* has been established near Calcutta for the purpose of utilising the tarry fluid obtained by the distillation of coal in coke ovens and gas retorts. Large quantities of *ammonium sulphate*, obtained as a by-product of coke manufacture, are now shipped as manure to Java, to the very sugar-cane growers who export sugar to India.

The *oil companies* in Burma and Assam and the Punjab continue to investigate fresh areas and enlarge their existing facilities. Practically all the paraffin wax and petrol obtained in the fractional distillation of crude oil are exported, whereas the kerosene, which is obtained in large quantities, is insufficient to meet the requirements of the peoples of India.

Indian Mineral Production.

Year.	Coal.¶	Iron ore.	Manganese ore.	Wolfram.	Chromite.	Tin ore.*	Gold.	Silver.	Lead.	Copper ore.	Mica.	Salt.‖	Petroleum.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Troy ozs.	Ozs.	Tons.	Tons.	Cwts.	Tons.	Gallons.
1911 ...	12,715,534	366,190	670,290	1,308	3,804	97	583,567	103,850	13,185	2,238	33,896	1,325,902	225,792,094
1912 ...	14,706,339	580,224	633,080	1,671	2,890	175	590,555	93,476	8,531	9,619	43,835	1,454,696	249,083,518
1913 ...	16,208,009	370,845	815,047	1,688	5,676	170	595,761	125,209	5,858	3,810	45,761	1,473,189	277,555,225
1914 ...	16,464,263	441,674	682,898	2,326	5,888	270	607,388	236,446	10,548	5,324	40,506	1,348,225	259,342,710
1915 ...	17,103,932	390,271	450,416	2,645	3,767	431	616,728	285,387	13,522	8,885	27,140	1,745,522	287,093,576
1916 ...	17,254,309	411,758	645,204	3,692	20,159	465	598,370	760,374	13,790	2,671	43,400	1,488,559	297,189,787
1917 ...	18,212,918	413,273	590.813	4,542	27,061	666	574,293	1,581,838	16,962	20,108	40,907	1,427,588	282,759,523
1918 ...	20,722,493	492,484	517,953	4,431	57,769	780	536,118	1,971,783	18,995	3,619	54,710	1,856,696	286,585,011
1919 ...	22,628,037	563,750	537,995	3,577	36,439	1,345	507,261	2,165,607	19,090	32,759	45,784	1,891,138	305,651,816
1920 ...	17,962,214	558,005	736,439	2,346	26,801	2,117	499,068	2,870,595	23,821	28,167	46,952	1,630,123	293,116,834
1921 ...	19,000,000§	600,000§	539,889‡	670§	28,741‡	1,610‡	470,000§	3,827,904	33,694	20,000§	30,944‡	1,800,000§	280,000,000§

* There is also a large output of tin not included. † Excluding Aden. ‡ Exported quantity. § Calculated (approximate).
‖ Including Aden. ¶ Including Native States.

Engineering Industries.—The old established firms of manufacturing engineers have held their own remarkably well during the period under review but they are complaining of the effects of the 10 per cent. duty on imported steel, which they state is a handicap when competing with imports of say waggons and structural steelwork. The new firms, which sprung up in such large numbers during the industrial boom of 1919, are, however, having a very difficult time and a study of their position in the pages of "capital" reveals a melancholy history.

List of Industrial Establishments in India.—The latest information is contained in the 1922 edition of the compilation "Large Industrial Establishments in India" issued by the Director of Statistics. From this has been taken the following statement showing the number of establishments belonging to, and the aggregate number of persons employed in, the principal industries arranged in order of importance in respect of the number of persons employed. Industries employing less than 5,000 persons in the aggregate have been lumped together under "others."

Class of Industry.	Owned by Government, Local Bodies, or State Darbars.		Owned by Companies or Individuals.		Total.	
	Number of establishments.	Number of persons.	Number of establishments.	Number of persons.	Number of establishments.	Number of persons.
Cotton spinning and weaving mills ...	3	1,532	282	305,811	285	307,343
Jute mills	1	436	75	275,643	76	276,079
Cotton ginning and pressing factories...	2	1,303	1,938	139,483	1,940	140,786
Railway and tramway workshops ...	21	40,154	77	89,389	98	129,543
Engineering workshops	27	6,874	192	50,365	219	57,239
Rice mil s	—	—	609	48,563	609	48,563
Jute presses	—	—	211	33,316	211	33,316
Printing presses	38	13,752	120	18,833	158	32,585
Tile and brick factories	1	568	255	27,661	256	28,229
Arms and ammunition	16	26,957	—	—	16	26,957
Dockyards and Port Trust workshops ...	6	10,491	10	15,991	16	26,482
Iron and steel producing works ...	—	—	1	20,806	1	20,806
Tanneries and leather works	1	2,278	106	14,900	107	17,178
Saw mills	2	142	142	14,413	144	14,555
Stone works	1	1,200	61	12,609	62	13,809
Petroleum refineries	—	—	8	13,608	8	13,608
Woollen mills	2	145	28	11,739	30	11,884
Sugar factories	—	—	55	11,590	55	11,590
Oil mills	—	—	172	9,552	172	9,552
Mica splitting works	—	—	20	8,705	20	8,705
Silk mills and filatures	1	25	68	7,963	69	7,988
Kerosene tinning and packing works ...	—	—	22	7,015	22	7,015
Tobacco factories	—	—	19	6,818	19	6,818
Lac factories	—	—	85	6,718	85	6,718
Paper mills	—	—	9	6,181	9	6,181
Rope works	—	—	32	6,085	32	6,085
Flour mills	—	—	55	5,601	55	5,601
Rubber works	—	—	13	5,442	13	5,442
Potteries	—	—	12	5,112	12	5,112
Others	62	17,818	451	63,549	513	81,367
Total	184	123,675	5,128	1,243,461	5,312	1,367,136

Company Flotations.—For the twelve months April, 1921, to March, 1922, the total number of companies registered was 719 with an authorised capital of Rs.80 crores, as against 1,022 companies with over Rs.147 crores of authorised capital in the preceding year. The following statement shows the trend of registration in recent years :—

Year.	No. of companies.	Index number (pre-war year = 100.)	Aggregate authorised capital.	Index number (pre-war year = 100).	Average authorised capital per company.
			Rs.		Rs.
1913-14 (pre-war)	356	100	66,91,53,000	100	18,79,00
1918-19	290	81	21,27,55,000	32	7,34,000
1919-20	948	266	2,81,76,12,000	421	29,72,000
1920-21	1,022	287	1,47,17,93,000	220	14,40,000
1921-22	719	202	79,54,14,000	119	11,06,000

There has, naturally, been a considerable falling away in the number of registrations during a period of financial and commercial depression when money was tight and credit seriously impaired. In the year 1921-22 the number of companies registered decreased by about 30 per cent. (from 1,022 to 719), and the authorised capital by 46 per cent. (from 1,47,17 lakhs to 79,54 lakhs), as compared with the previous year. The noticeable decreases are under cotton mills (Rs.17 crores); estate, land and building (Rs.9 crores); sugar (including jaggery) manufacture (Rs.5 crores); banking and loan (Rs.5 crores); railways and tramways (Rs.3 crores); rice mills (Rs.2.5 crores); cotton and jute presses (Rs.2 crores); jute mills (Rs.1 crore); navigation (Rs.1 crore), and coal (Rs.1 crore). Of an aggregate authorised capital of 80 crores for the year, over 20 crores represented iron and steel flotations, and almost the whole of this consisted of the registration of the United Steel Corporation of Asia, Ltd., a project in which Messrs. Bird and Co., Calcutta, and Messrs. Cammell, Laird and Co., Ltd., of Sheffield, are jointly interested.

Company Liquidations.—During the year 1921-22, no less than 254 joint stock companies with an authorised capital of Rs.25,36 lakhs (say, £16,900,000) went into liquidation or were finally dissolved. No less than 6 crores represented life, fire and marine insurance companies, and 2½ crores navigation companies. These were mostly companies floated in Bombay during the boom, many of which were doomed from the outset. Of the total of 25 crores of liquidations, Bombay companies supplied 15 crores, which is easily understood when one recalls the speculation which went on in that market in 1919-20. The majority of the registrations in Bengal represented industrial and trading ventures of a sounder nature.

The above particulars of liquidations of joint stock companies represent only a fraction of the liquidations which went on all over

India. The great mass of Indian trading concerns are private partnerships and the number of these which failed to meet their engagements is legion. Liabilities were repudiated on a scale and with a callousness which has no precedent, and although, in most cases, proceedings have not been taken against the defaulters, this is only because the delays in obtaining a judgment in the Indian Courts were so great and the difficulties of securing satisfaction, even when a decree is obtained, are almost insuperable.

Prices of Securities and Shares.—Statement showing the variations in the prices of Securities and Shares at the end of July, 1914, July, 1917, March, 1918, March, 1919, March, 1920, and March, 1921.

No.	Descriptions.	Index numbers taking the price on the 29th July, 1914 as 100.				
		29th July, 1914.	26th March, 1918.	27th March, 1919.	31st March, 1920.	22nd March, 1921.
5	Government Securities ...	100	67	74	62	59
96	Port Trust and Municipal Debentures	100	84	83	82	80
8	Banks	100	111	114	132	116
32	Jute Mills (Ordinary) ...	100	467	383	562	372
61	Cotton Mills (Ordinary) ...	100	161	157	388	318*
76	Coal Companies (Ordinary)	100	133	157	147	150
85	Tea Companies (Ordinary	100	125	124	135	94
4	Flour Mills	100	206	238	406	388
1	Iron and Steel Company (Tata-Ordinary) ...	100	295	284	207	132

* Quotation for April 5th, 1921.

Labour Conditions.—Labour conditions throughout the year remained unsettled although they show a great improvement on the year 1920, which was marked by strikes all over the country. Operatives in the cotton and jute mills (with the exception of the men at Binny and Co.'s mills in Madras) worked fairly steadily, and labour on the tea estates has settled down since the severe crisis early last year. Strikes occurred among the coolies in the port of Calcutta, and one involving 18,000 men is now (June, 1922) in progress. The close of the year witnessed the most serious strike on the East Indian Railway, which lasted nearly two months and which culminated in the wrecking of the Punjab mail. Although, as I have said, there is an improvement as compared with 1920, conditions are still most disturbed and labour generally is in a truculent mood as the result of the political agitation throughout the country and the weakening of constituted authority. Indian labour, at the best, is relatively inefficient when contrasted with conditions in Europe and America or even in Japan and China. When to this, however, is added

political unrest and strong racial feeling, the inevitable result is deliberate slacking which to some extent approximates to the "ca'canny" movement elsewhere. Complaints are becoming general among employers in India that they are not obtaining the output they formerly did. This is partly due to a general slowing down during working hours and partly to the lower number of days worked as a result of increased wages—a trend which is most marked in the coalfields.

Cost of Living.—The Government of India have discarded as being impracticable the idea of compiling an index number of prices for the whole of India. They have therefore left the Provincial Governments to make their own arrangements. Bombay, however, is the only province which has organised a strong Labour Bureau to deal with this and other problems affecting employment. The Director of the Bombay Labour Office publishes monthly a cost-of-living index for the working classes in Bombay. The articles included in the index are cereals, pulses, other articles of food, fuel and lighting, clothing, and house rent. The articles have been given the relative importance which each bears to the total aggregate expenditure. No allowance is made for any change in the standard of living since July, 1914. The following table shows the percentage increase, in the case of Bombay, over July, 1914 :—

April, 1921	60	November, 1921	82
May, 1921	67	December, 1921	79
June, 1921	73	January, 1922	73
July, 1921	77	February, 1922	65
August, 1921	80	March, 1922	65
September, 1921	85	April, 1922	62
October, 1921	83	May, 1922	63

Government Activities in Stimulating Industry.—In my last report, I outlined the difficult position of the Central Department of Industries as a result of the Reforms scheme, according to the terms of which the development of industries was made a provincial and a transferred subject in charge of Indian Ministers. I also pointed out that the provincial Directors of Industry are now the keystones of the system, and suggested that British manufacturers interested in the industrial development of India should get into touch with them. The system has not changed materially during the past year, but it is possible that the Inchcape Retrenchment Committee may recommend some regrouping of the functions now controlled by the Department of Industries of the Government of India.

I am indebted to the Industries Department of the Government of India for the following account of some of the Department's activities during the year.

Fairs and Exhibitions.—The Governments of the United Provinces, the Punjab, Bombay and Burma participated in the British Industries Fair, 1922, and a total floor space of 2,300

square feet was engaged for them. The Indian Trade Commissioner in London, who supervised the arrangements, reports that the business put through was some 25 per cent. more than that of the previous year. The subject of India's participation in the British Empire Exhibition, 1924, has received considerable attention during the year. The Legislative Assembly on March 25th, 1922, adopted the following resolution :—

> "That this Assembly recommends to the Governor General in Council that the necessary steps should be taken and funds provided to enable India to participate on an adequate scale in the British Empire Exhibition to be held in London in 1924."

A Commissioner for all India, Mr. Vijayaraghava Achariyar formerly Dewan of Cochin State, has been appointed for the purpose of organising exhibits and advising participants. The cost of this post together with the initial cost of the buildings for the whole of the Indian exhibits will be met from central revenues, the Provinces and other participants being charged rent for the space they will occupy and a share of the incidental expenditure.

Conference of Departments of Industries.—With the object of providing a link between the Central Department and Provincial Departments of Industries, a series of annual conferences was inaugurated in 1920, to which the Provincial Ministers for Industries and their Directors are invited. Conferences were held in May, 1921, at Simla and in April, 1922, at Calcutta.

At the conference held in April, Mr. C. A. Innes (Central Department of Industries) in his presidential address briefly reviewed what had been done as a result of the deliberations at the last conference, paying particularly attention to such subjects as the British Industries Fair, small industries and coal, technical scholarships, the development of resources, and census of production. Following the speech of Mr. Innes, the conference discussed the relations between the railways, the public and the Department of Industries; the constitution of our all-India Industrial Service and Chemical Service; the British Empire Exhibition, etc.

Glass Industry.—It may be of interest to British manufacturers to know that the Government of India have been endeavouring for over two years to secure, through the Secretary of State, the services of suitable experts to investigate the conditions in the Indian glass industry and to assist in developing it. They have now been informed by the Secretary of State that it is impossible to induce men of the right stamp to come to India for this purpose. The question whether any other means of assisting the industry can be devised is under consideration.

Aid to Calcutta Soap Works.—In connection with the question of making India self-supplying as regards stores for military purposes, an enquiry was made as to whether any firm in India could

undertake the manufacture of dynamite glycerine. The Calcutta Soap Works Co. Ltd., was prepared to undertake manufacture with financial assistance from the Government, and provision was made by the Legislative Assembly in the budget estimates for 1922-3 for the grant of a loan to the company to enable it to purchase certain plant. Negotiations with the company were proceeding at the close of the year.

Imperial Tanning Institute.—The Government of India decided, at the close of the year 1921, to abandon, owing to the financial stringency, all idea of proceeding for the present with the scheme for the establishment of an Imperial Tanning Institute and demonstration boot factory in Calcutta.

Revision of the Indian Mines Act, 1901.—The revision of the Indian Mines Act was originally suggested in 1907 by the then Chief Inspector of Mines. After the amendment of the English Mines Act, 1911, the Chief Inspector of Mines revised these proposals and added suggestions for further amendment on the lines of the new English Act. It was desired that the amendment of the Act was necessary and proposals were referred to Local Governments both in 1915 and 1917. It was not, however, considered advisable to hasten legislation during the war, and as most of the amendments were not of immediate importance, further action was accordingly postponed. The amendment of the Act is now under consideration with a view to the inclusion of certain amendments rendered necessary by the Conventions of the Washington Labour Conference and by the Constitutional reforms.

Patents and Designs.—In September, 1920, a new section (78-A) was added to the Indian Patents and Designs Act, 1911, to enable arrangements to be made between India and the United Kingdom and the Dominions for the reciprocal protection of patents and designs. Such arrangements with the United Kingdom were completed in 1920, and His Majesty's Secretary of State for India was then asked to make necessary representations to the Dominions of Canada and New Zealand, the Commonwealth of Australia, the Union of South Africa and Ceylon with a view to their making satisfactory provision in their respective patents and designs laws for the protection within their territories of inventions or designs patented or registered in British India on the understanding that the Government of India would make the provisions of section 78-A of the Indian Patents and Designs Act applicable to those Colonies.

The Government of Ceylon having made satisfactory provision for the protection of inventions patented in British India, the provisions of section 78-A of the Indian Patents and Designs Act, so far as they relate to patents, were applied to that country with effect from the 27th February, 1922. By virtue of this arrangement, if an Indian applicant files an application for a patent in Ceylon within twelve months of the date of his application in British India his application in Ceylon is given the same

date as his application in India. Similar reciprocal advantages are given to the Ceylonese inventor if he desires to obtain a patent for an invention in British India.

Steam Boilers.—In 1920, a Committee was appointed to enquire into the possibility of the unification of the laws and regulations relating to the inspection, working and upkeep of boilers in India. The Committee submitted their report on the 10th March, 1921.* Their chief recommendation was that there should be a uniform standard for boilers throughout the whole of India and that in order to secure this an all-India Boiler Act should be enacted by the Indian Legislature. The Government of India's provisional conclusions on the Committee's report were communicated in September, 1921, to the various local Governments and Administrations for an expression of their views. The replies of all except one have been received. They are now being considered and necessary steps will be taken as soon as possible to undertake the proposed legislation.

The Committee also drew up a set of draft Regulations which prescribe uniform standards for the material, design, construction, inspection, etc., of land boilers. As these are of a highly technical nature, His Majesty's High Commissioner for India has been asked to have them examined by the Board of Trade in consultation with leading boiler manufacturers and boiler insurance companies in the United Kingdom.

The Indian Factories (Amendment) Act, 1922.—To give effect to the ratification by India of the draft Conventions approved by the International Labour Conference at Washington a bill to amend the Indian Factories Act, 1911, was introduced in the Indian Legislature in March, 1921. Advantage was taken of this opportunity to introduce a number of important reforms, which the experience of ten years working and the enquiries of the Industrial Commission and the Indian Cotton Committee had shown to be necessary. The bill was referred to a Joint Select Committee of both Houses, was finally passed in January, 1922, and came into force on July 1st, 1922. The complete text of the new Bill can be seen on application to the Department of Overseas Trade. The principal features of the Act are:—

(1) The provision of further protection for children working in factories by raising the maximum age from 14 to 15 and the minimum age from nine to twelve years. Children, however, who have been lawfully admitted to factories before July 1st, 1921, shall not be excluded. The maximum number of hours during which a child may work in any one day shall not exceed six, and definite provision is made for intervals of rest.

(2) The limitation of the hours of adults in all classes of factories to sixty per week and eleven per day, lengthened intervals for rest and provisions for weekly holidays.

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* Copy of this Report may be seen at the Department of Overseas Trade.

(3) A considerable extension in the definition of a factory, which is now taken to include any premises, in which mechanical or electrical power is used, employing simultaneously not less than twenty persons on any one day in the year. The term may also be applied to any premises employing simultaneously not less than ten persons on any one day of the year, if such premises are declared by the local government to be a factory within the meaning of the Act.

Further clauses deal with artificial humidification and definite rules are laid down regulating the grant of exemptions from the provisions of the Act.

Workmen's Compensation.—The Government of India are engaged on a scheme for the provision of workmen's compensation. The views of local Governments have been obtained and steps are now being taken to draft a bill for introduction in the September Session, 1922.

Registration and Protection of Trade Unions.—This question is also under consideration. The views of local governments, on the whole, are understood to be favourable and it is probable that a Bill will be introduced during the next year or so.

Humidification.—The Government of India have, for some time, been considering the desirability of prescribing standards of humidity in Indian cotton factories. During the war, the question was postponed, but in the summer of 1921, an expert was bought out from England to investigate the question. Preliminary enquiries continued throughout the year.

Census of Wages.—Preliminary steps were taken for the compilation of an all-India census of wages, but owing to the need for economy in public expenditure, much of the programme has been abandoned.

Cost of Living Index Number.—In March, 1921, the Government of India addressed local governments with a view to the inauguration of an inquiry into the cost of living of the labouring classes to enable an all-India index number to be compiled. After careful examination, however, it was decided to abandon the proposal as being unpracticable, at least at the present time.

Disposal of Surplus Stores.—This important branch has been under the direct charge of Mr. A. H. Ley, C.I.E., I.C.S., Chief Controller (Surplus Stores), who is responsible to the Honourable Member in charge of Industries. The aggregate value of surplus stores of all kinds disposed of during the period 1st April, 1921, to 31st March, 1922, amounted to 256 lakhs of rupees (say, £1,707,000). The details were as follows :—

	Lakhs.
Engineering and Miscellaneous Stores	97
Medical Stores	8
Food Stuffs	10
Textiles	141

During the year several large sales were made including those of the entire stocks of flannel and " doosuti." Important sales of garments were made principally to South Africa. While the sales made have been very satisfactory and stocks are being rapidly reduced, shipments of further stores are still being received from Mesopotamia. It is hoped, however, to be able to close the greater part of the organisation by the end of the year.

Indian Stores Department.—The activities of this branch of the Industries Department have been given in detail in Chapter III, pages 93-95.

Government Acetone Factory.—The acetone factory at Nasik Road, which was constructed in 1916 as a war measure, and which it was no longer necessary to maintain for military purposes, was sold in March, 1922, to the Government of Bombay for the manufacture of country liquor.

Hydro-Electric Survey of India.—Owing to the transfer of this important department from the Central to the Provincial Governments as a result of the constitutional reforms, the scheme for a co-ordinated survey of the whole of India has been abandoned. Mr. J. W. Meares, C.I.E., who held the post of Chief Engineer of the Hydro-Electric Survey, and who has been Electrical Adviser to the Government of India for many years, retired from India in August, 1922, both the posts he held having been abolished. While it is true that Provincial Governments are themselves, in some cases, appointing Committees to consider what steps they should take, it is to be feared that, in most instances, funds will not be forthcoming and that the hydro-electric development of the country will be retarded for many years. I would commend British manufacturers of hydro-electric plant to the admirable Triennial Report of the Hydro-Electric Survey, which was published in 1921, and a copy of which may be seen at the Department of Overseas Trade. This is the most luminous review of the water-power resources of India which has ever been written.

Activities of Directors of Industry.—The progress which has been in stimulating industry in the various provinces can best be gauged from the reports of the various Directors of Industry for 1920-21, copies of which may be obtained from the agents in London for the sale of Indian official publications.

ANNEX.

REPORT ON THE TRADE OF CHINESE TURKISTAN, WITH INDIA, CHINA, RUSSIA, JAPAN, AFGHANISTAN, BADAKHSHAN, AND TIBET.

For the year ending March 31, 1922.

By *Lieut.-Colonel P. T. Etherston, H.M. Consul-General, Kashgar.*

Geography.—Chinese Turkistan as at present constituted is bounded on the north by the Altai Mountains, on the east by Mongolia and Kansu, on the south by Tibet and the northern frontiers of India, and on the north-west by the Russian Pamirs, Ferghana and Semirechia. The Thian Shan Mountains may be taken as the dividing line between north and south, the southern section, known as Kashgaria, being the one with which this report mainly deals. Generally speaking, Chinese Turkistan is a land of oases; the arable portions are confined to the vicinity of rivers and streams, and a narrow belt skirting the highlands of the Thian Shan, the Pamirs, and the Kuenlun Mountains in the south. Beyond this belt, which is of no considerable width, and the rivers the country is largely desert, and does not throughout its extent present a surface of fertile land. The cultivated areas are situated within the oases, and cultivation in the latter is maintained by means of irrigation; the rivers as they issue from the mountains are diverted by means of dams into a number of streams, from which the water is passed through canals on to the fields. It will thus be seen that irrigation is the mainstay of the economic life of the country; where there is water there is prosperity and cultivation, and elsewhere only desert. The amount of land that is suited to cultivation is considerable, and given a system of irrigation on a modern and scientific basis the area might be largely increased with a resultant enhancement of trade and prosperity. According to the conditions of soil and of irrigation the rural population is distributed over villages and farms; between the latter stretches of waterless country are met with.

The general features of the province present several aspects. In the south there are extensive sands with rocky tracts and country covered with loose stones and pebbles, the soil being brackish, with large deposits of soda. The brackish soil is met with all over the province; salt impregnates it generally, and often fields present a snowy appearance from the quantity of salt exuding at the surface. In the northern and central parts the sandy tracts are less frequent; there the contour takes the form of narrow and low ranges of hills, and in the vicinity of the mountains the ground is covered with sand and shingle.

Some of the hill streams form small lakes, or, as in the case of the rivers in Seistan, lose themselves in the desert or gravelly soil. The rivers in their upper courses flow mostly through rocky gorges, while in the middle and lower streams when they are in the plains the currents are less rapid and the banks are low and marshy, so that bogs and marshes are formed, overgrown with reeds and tamarisk.

Ethnography.—The population is one of diverse elements, and it is believed that the province was originally inhabited by people of Aryan origin. In the second century B.C. races of Mongol descent came into Turkistan, and they either drove out the aborigines or mingled with them and so formed the race inhabiting Kashgaria. Traces are also found of the Arabs who invaded Turkistan in the eighth century, and from an ethnographical point of view the country presents unusual interest.

The inhabitants are divided into two classes, the settled or urban population of the plains, and the nomadic or people of the hill and mountain tracts. The former comprises Turkomans, Chinese, Tungans (Chinese Muhammadans), Andijanis, Indians, and individuals from the border states. The nomadic portion consists of the Kirghiz, Tajiks,

Kalmuks, and Mongols, and a tribe known as the Dulanis who are found along the banks of the Yarkand river between Yarkand and Aksu.

To the north of the Thian Shan is the Ili Valley, the most fertile part of Chinese Turkistan, which may be regarded as the halfway house between the Turanian races of Central Asia and the Mongol races of China. There one meets the settled Muhammadan, Taranchis as well as Tungans, Manchus, Mongol, Kirghiz, Sarts, Kazaks, and Kalaske.

No reliable data are available on which to base an estimate of the actual population of Chinese Turkistan. From calculations made by the postal service, which is under European supervision, and from information obtained from a Chinese official source, the numbers would appear to be 1,700,000, but it is highly probable that a proper census would reveal a larger number. The majority of the population is Turki, or Turkoman, or Sart as known to the Russians, the Chinese comprising but 4 per cent. The Turkis as a race display a lack of energy and enterprise, and the various conquests of Turkistan have left deep-rooted traces on the character of the people and deprived them of all idea of unity. They are easily ruled, are not fanatical, and with development of the country on sound principles should increase and constitute a rich and thriving community.

Administration.—The province is divided into six circuits, each under an intendant known as a Taoyin, the circuits being sub-divided into districts in charge of district magistrates. Over all is the Governor with headquarters at Urumchi, who was formerly subject to the Viceroy of Kansu, but since the revolution of 1912 Chinese Turkistan has been formed into a separate province. The six circuits as at present constituted are Urumchi, Ili, Tarbagatai, Altai, Aksu and Kashgar, and there are altogether 41 districts.

Each district magistrate has under his orders a number of Begs, and minor officials, who carry the orders of the Yamen into effect, collect the annual revenue, arrange for transport, repairs to roads and bridges, settle water questions and rights, and generally act as the intermediary between the Chinese official and the people. Each begship is divided into a number of villages each in charge of a Mingbashi (head of one thousand households) or a Yuzbashi (head of one hundred households).

Resources.—The natural wealth of Chinese Turkistan is as yet unexplored, although it is rich in metals and minerals. Gold is found near Keria and Cherchen and in the mountains along the northern border of Tibet. In Aksu, Kuchar and Sairam is copper, whilst distributed generally throughout the country are extensive deposits of coal, iron, sulphur, sal ammoniac, gypsum, ozokerit, lead and jade. Oil is found near Kashgar and in the Thian Shan north of Kuchar, but so far as the Kashgar district is concerned the oil industry there is a monopoly of the Chinese Commander-in-Chief, who exploits the wells on primitive lines.

Of raw products, other than grain of all kinds, wool, cotton and silk are the principal. Indeed, the province could be made self-supporting.

The silk industry of Khotan is one that is open to profitable development. Notwithstanding its good quality, a defective method of reeling it renders it of comparatively little use for the export trade. It is employed with wool and gold thread in the manufacture of Khotan carpets, and much of it is used in the sewing of coats and cloaks for the better classes.

Jade was formerly a prominent feature of Khotan products, but of late years the export and general sale of it has fallen off. There is undoubtedly a plentiful supply in the Khotan district and the northern Yuan Luw valleys and the Karakash valley. The jade of Khotan was carried far and wide in mediæval days, and jade implements have been discovered in Eastern Europe.

Agriculture is the most important and widely-spread industry and that on which the inhabitants depend for their existence, as there are no imports of foodstuffs from neighbouring States.

Communications.—These are on a par with the general administration of the province; roads metalled or in any way prepared do not exist, and may be characterised as rough tracks which are often impassable in the spring months when the thaw is general. In the mountainous communication is by means of footpaths or tracks worn by the passage of sheep and cattle. Some years prior to the war, when Russian influence was predominant in Kashgaria and the province generally, a well-graded cart road was constructed from Kashgar to Semirechie by the Turgat Pass. This was done to promote growth in commercial relations and activity. Since the war and the decline of Russian prestige the road has fallen into disrepair and is no longer passable for carts, but could be used by pack transport.

The main trade route for British-Indian traders is that from Leh, Ladakh, over the Karakoram to Yarkand. This has always presented great physical difficulties owing to the height of the passes and the rarity of the atmosphere. A good deal of improvement has been effected by the Government of India within recent years, but the road will never be an easy one for the reasons given above. For centuries Leh has been the link between India and Central Asia. When Russian penetration of Central Asia threatened to endanger the ancient connection it was thought that the trade might cease with the extension of the Russian railway to Andijan in Ferghana, for the latter brought Kashgar within fourteen days of railhead, an immense advantage over the long and arduous route from India. Owing to the relative positions of Yarkand, Khotan, Kashgar, and Andijan, the opening of the railway and the improvement in communications from Russian territory certainly did affect the trade. The Leh-Karakoram road is, however, not the ultimate destination of Central Asia trade, or a centre of Indian commerce. It is really a forwarding point, situated about eighteen marches from Srinagar in Kashmir, and cannot be regarded as an economic centre such as the railway makes Andijan. In the latter the Russians have an advantage in trade, but it has been stultified by recent events in Russia. It is improbable that commerce would cease altogether on both routes, for certain products in each country will be in demand in the other, and the journey *viâ* Bombay, the Black Sea, and Andijan will not, under present conditions, prove cheaper than the Leh road.

There are no railways in Chinese Turkistan, although a survey for a line from railhead in China proper to Urumchi has been made but nothing further has eventuated.

Monetary System.—The following table gives the value of the various monies now in use:—

50 liang = 1 Yambu = 50 sars, or taels.—Rs.125, or £8 6s. 8d.
1 liang = 1 sar = 16 tengas.
400 hungch'ien = 400 red cash, or dachins.
10 ch'ien = 10 miskals.
1 ch'ien = 1 miskal = 40 red cash or dachins.
1 tenga = 25 red cash or dachins.

The yambu was originally a shoe of pure silver weighing 65·05 ozs., but the sars or taels of this province are so debased that a yambu is now worth about 64 sars, the rate fluctuating according to the price of silver.

The Chinese reckon always in tengas and puls. Neither the tenga nor the pul exists as a coin, but are always used by the Turkis for purposes of calculation.

Since the revolution in China, coins whether in silver or copper have been disappearing from circulation, and notes have come more into prominence: it is estimated that the value of these amounts at the present time to 10,000,000 taels, possibly some six years' revenue of the province. These notes are legal tender for the payment of taxes, but silver could not be obtained in exchange were they to be presented at a Government treasury.

Gold coins were minted in Kashgar in the days of Yakub Beg, in the sixties and seventies of last century, but the Chinese do not mint them.

In pre-war days Russian money was largely in circulation in Chinese Turkistan, it being practically the only currency in commercial dealings between the markets of Kashgar and those of Russian Turkistan. The value of the rouble was subject to fluctuation due to the peculiarities of the local exchange rate, consequent on the fact that the amount of Russian money coming into, and leaving, the Kashgar market was never proportionate. Then, too, there was an annual exodus of the local population seeking work in Ferghana, which also exerted a temporary effect on the money market, since these people exchanged Chinese money for Russian roubles. Russian rouble notes were then popular amongst the inhabitants of Chinese Turkistan owing to their superiority over gold and silver for transmission to a distance. Now, however, all Russian notes, especially the Soviet ones, are at a discount.

Weights and Measures.—The following are current in Chinese Turkistan:

10 li = 1 fen = ·0133 oz.
10 fen = 1 ch'ien = ·133 oz.
10 ch'ien = 1 liang (tael) = 1·33 oz.
16 liang = 1 jing (catty) = 1·33 lb.
100 jing = 1 tan (picul) = 133 lbs.
1 charak (Turki) = 19½ lbs.

The linear measures are:

10 fen = 1 ts'un = 1·31 inches.
10 ts'un = 1 ch'ih = 13·1 inches.
10 ch'ih = 1 chang.

The standard of distance is the li or Chinese mile, generally taken as one-third of an English mile.

In square measure 1 mu = ·6 of an acre.

For measures of capacity, the Chinese system is used, but liquids, such as milk, wine, etc., are sold by weight.

Trade Routes.—Mention has already been made of the Leh-Karakoram route which crosses some of the highest passes in the world, and as a trade route is the loftiest. Owing to the great physical difficulties trade is carried on at a considerable disadvantage, and every summer during the period when the passes are open a mortality in baggage animals results. This is consequent on the high altitudes, the desolate nature of the country traversed, and the glaciers to be negotiated.

The construction of the Russian Central Asian Railway and its extension to Andijan had far-reaching effects on the trade of Chinese Turkistan. It enabled goods to be brought *via* the Black Sea to Batoum and thence to Baku on the Caspian Sea, across to Kradnovodsk, from which point the railway to Andijan starts, and but for the war and the revolution in Russia there can be no doubt that Russia would have practically absorbed the Central Asian and Western China trade. Andijan was an emporium for Russian goods destined for the eastern parts of Russian territory, and for Chinese Turkistan. Agencies had been established for the collection and forwarding of goods, and steps taken to monopolise the trade marts. As compared with the journey from India, Russian trade would be handicapped by a land journey of less than three weeks, and from Andijan the route passes through comparatively easy country.

With the collapse of Russia trade has come to a standstill in that direction, although it should be noted that efforts were made to revive it through the agency of the Russo-Asiatic Bank which took measures to resuscitate commercial activity in 1920-21, but the impossibility of doing business with the Bolsheviks rendered the bank's efforts vain.

With the establishment of law and order in Russia there should be a trade boom, but conditions in Russian Turkistan are such that a resumption

of trade under normal conditions cannot be looked for for some years owing to the impoverishment of the country, the lack of materials, and the deplorable state of the railways, permanent tracks, and want of rolling stock.

The above remarks apply to the Trans-Siberian Railway, which afforded a route from the East to Chinese Turkistan and brought the markets of Japan within one month of the Turkistan commercial centres.

The main trade routes from China proper are the north and south roads, the one leading through Lanchow to Hami and Urumchi, the southern through Sachow to Khotan and thence to Kashgar and Urumchi. The average time from Peking by these routes is six months, and beyond the dust and loess formations and their general neglected state, they present no serious physical obstacles.

There are routes leading from Turkistan to Tibet, but the trade is negligible and not of sufficient importance to warrant special mention. It is said that the wool and hides trade between Tibet and India and China has possibilities, but under conditions obtaining in Tibet the attendance indispensable to the management of flocks and herds is unprocurable, owing to a large proportion of the male population becoming lamas and living idly in the monasteries.

Exports to India.—The trade in textiles showed a slight increase, whilst there was also a rise in the import of woollen piece goods, which will continue to be popular as long as the quality is maintained. Numdahs again showed an advance of about 650 maunds.

The export of silver fell off owing to the Chinese checking the export, which was formerly one of the main items in trade. In the north of the province silver coins have been almost withdrawn from circulation, and even in Kashgaria there is very little silver reserve. Attention has previously been drawn to the chaotic state of finance in this country, which will be further aggravated if the export of silver by the Chinese themselves is not stopped. In June, 1921, a further issue of paper money was made by the provincial authorities which has no backing in silver.

The traffic with India in Russian paper money has ceased owing to the embargo thereon.

Imports from India.—Cotton goods continue to be in demand and, to a limited extent, indigo, but this latter showed a falling-off compared with the previous year. Medicines exhibited a marked increase due to the slowly growing faith in Western medicines and their efficiency. Spices, paints and colours were in greater demand, whilst unrefined sugar was imported to advantage, the increase being over 600 maunds on the previous year. In pre-revolution days large quantities were brought from Russia and found a ready market, but in common with general trade from Russia it has long since ceased to come in.

In the trade reports rendered for the past two years a list of articles was given which will be in demand when conditions assume a normal aspect in Central Asia, and to facilitate reference it will be well to repeat it:—

Household utensils.—All kinds.
Hardware.—Axes, screw drivers, hammers, locks, hooks, horseshoes, chisels, files, saws, carpenters' and blacksmiths' tools, enamelled ware, lamps, heating stoves for coal, wood and oil.
Ploughs, harrows, mowers, reapers, sickles and threshers.
Dairy appliances and utensils.
Machinery for factories.
Foodstuffs.—Groceries, salts, vermicelli, sago, tapioca, tea, proprietary articles, patent medicines, etc.
Articles of clothing.—Boots and shoes, dress materials, cotton goods, blankets, underwear, etc.
Miscellaneous articles.—Drugs, medicines, dyes, paper, stationery, and material for setting up printing presses.

The above list applies to both Russian and Chinese Turkistan; indeed the larger demand will occur in Russian territory, where the population is more advanced and where there is a higher standard of civilisation and culture.

Trade with China Proper.—The continued stoppage of trade with Russia enables China to increase its lead. There is still a good demand for silks and embroideries. This market might be captured by British traders, but it would be necessary to compete with two formidable rivals, America and Japan, who are seeking to control as much as they can of the trade through China to Central Asia.

Trade with Russia.—There is still no sign of a revival, although some slight commerce is carried on between Chinese Turkistan in the north and the Russian province of Semirechia. Ili, the name by which the land north of the Thian Shan is known, has always been regarded as the richest and most fertile portion of Chinese Turkistan, and its trade with Russia in pre-war days bade fair to assume a most favourable aspect.

The Bolsheviks have attempted to restore the commercial relations formerly existing, and the idea would be feasible were the Soviet in a position to pay, but traders are chary of accepting the useless paper money offered.

Trade with Japan.—Japanese goods are finding their way in increased quantities to Western China, despite the fact that Japan has domestic difficulties as well as the Chinese boycott to contend with. The commercial future of Japan depends to no inconsiderable extent upon her retention of the Chinese market, but from the samples of goods one sees here the Japanese must improve the standard, for as Chinese Turkistan develops, and commercial competition increases, the demand will grow for goods of superior quality.

As in the past the articles most in demand, and which find a fairly ready sale, are matches, cigarettes, scents, cotton goods, flimsy silks, and soaps.

Trade with Afghanistan and Badakhshan.—Beyond a few insignificant articles such as pistachio nuts, foxskins, and almonds, there is no trade in the proper sense of the term with either country.

Conclusion.—In conclusion, if the most is to be made of the commercial potentialities of Chinese Turkistan increased energy and activity are necessary. The essential factor is that the government of the country should be strong, resolute, and inspire confidence. The construction of a railway to the capital at Urumchi, the development of the mineral resources, and the fostering of trade, should afford ample scope for strenuous efforts, but to ensure success the initiative must come from Europeans, for the Chinese lack the requisite energy and driving power.

APPENDIX I.

TABLE A.

BRITISH IMPORTS. (*See* page 16.)

Value of principal articles imported by sea into British India from the United Kingdom.

——	1913–14.	1919–20.	1920–21.	1921–22.
UNITED KINGDOM.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports the efrom—				
Apparel	72	74	1,01	53
Arms, ammunition, etc. ...	35	26	55	59
Artificial silk yarn	*	15	6	2
Belting for machinery ...	70	48	1,31	88
Bobbins	*	18	52	1,00
Books and printed matter ...	*	39	61	45
Boots and shoes	72	15	57	10
Building and engineering materials	78	95	1,80	1,31
Carriages and carts	17	17	50	32
Chemicals, etc.	76	1,22	2,01	1,36
China clay	*	9	28	20
Coal and coke, etc	38	4	6	2,98
Cordage and rope	6	7	8	5
Cotton—				
Raw	20	—	74	1,51
Twist and yarn	3,57	3,54	7,95	8,77
Piece goods—				
Grey	25,03	19,24	18,72	18,38
White	13,93	15,30	20,88	12,27
Coloured, etc....	15,34	11,22	30,54	6,48
Other manufactures	1,89	1,51	3,02	1,50
Cutlery	12	11	23	9
Cycles and parts	33	28	85	13
Drugs and medicines	60	77	1,08	72
Dyeing and tanning substances ...	6	55	1,00	79
Earthenware and Porcelain ...	37	25	56	44
Flax manufactures	39	34	59	29
Glass and glassware	26	32	67	44
Haberdashery and millinery ...	66	44	1,28	30
Hardware	2,25	2,05	5,25	3,68
Instruments, apparatus, etc. ...	1,37	1,15	3,93	3,55
Ivory	11	22	7	17
Jewellery, etc.	12	6	19	10
Jute manufactures	14	15	16	8
Leather, including hides, tanned, etc.	33	37	1,07	59
Liquors—				
Ale, beer and porter	49	34	80	65
Spirit	77	1,48	2,03	1,60
Wines	14	26	41	18
Machinery and millwork	6,96	5,92	17,53	28,33
Metals—				
Copper, excluding ore	1,00	1,57	1,24	85
Iron " "	36	28	67	42
Iron or steel	10,22	8,49	17,85	10,07
Lead	18	15	22	14
Steel	60	1,30	3,74	91
Others	1,64	2,61	4,36	1,89

* Not separately distinguished.

—	1913-14.	1919-20.	1920-21.	1921-22.
UNITED KINGDOM—*cont.*	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports therefrom—*cont.*				
Motor cars and motor cycle, etc....	1,08	74	3,85	1,36
Oils, mineral	23	26	41	37
„ vegetable, animal, etc. ...	21	10	22	14
Packing, engine and boiler ...	4	9	4	4
Paints and colours	51	74	1,26	79
Paper and pasteboard	89	88	3,13	1,12
Piece-goods of cotton and artificial silk	*	59	97	6
Pitch, tar and Dammer	9	9	12	8
Polishes	10	18	39	12
Provisions and oilman's stores ...	1,50	1,15	1,79	1,19
Railway plant, etc.	9,33	4,09	13,48	18,40
Rubber manufactures, including tyres, etc.	32	82	1,15	65
Salt	20	39	36	26
Ships, part of	21	28	20	85
Silk manufacture, including yarns, etc.	28	12	25	11
Soap	68	1,08	1,31	87
Starch and farina	2	3	3	2
Stationery	50	47	1,27	66
Sugar	28	18	32	21
Tallow	12	3	13	8
Tea-chests	50	33	78	53
Tobacco	63	1,36	1,60	1,31
Toilet requisites	11	16	31	10
Toys and requisites for games ...	17	9	20	11
Umbrellas and umbrella fittings...	30	9	24	14
Woollen manufactures, including yarn, etc.	2,22	1,37	4,76	87
Other articles	2,87	4,11	8,41	5,34
TOTAL (exclusive of Government Stores ...	117,58	104,98	204,60	150,89

* Not separately distinguished.

TABLE B.

IMPORTS FROM U.S.A. (*See* page 17.)

Value of principal articles imported by sea from the United States into British India.

—	1913-14.	1919-20.	1920-21.	1921-22.
UNITED STATES.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports therefrom—				
Arms, Ammunition and Military stores	1	9	7	7
Belting for machinery	1	6	11	9
Boots and shoes	1	21	43	4
Carriages and carts	1	7	26	20

	1913–14.	1919–20.	1920–21.	1921–22.
UNITED STATES—*cont.*	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports therefrom—*cont.*				
Chemicals	*	11	22	11
Clocks and watches	5	5	10	7
Drugs and medicines	5	23	19	11
Dyeing and tanning substances ...	*	55	77	27
Hardware	38	1,33	2,26	1,03
Instruments and apparatus ...	14	81	1,33	1,02
Iron and steel, excluding ore ...	42	5,43	5,20	4,43
Liquors, etc.	6	18	13	9
Machinery and millwork	25	2,80	4,03	4,51
Motor cars and cycles, etc. ...	23	3,09	6,49	67
Oils, mineral	2,31	5,24	5,30	4,87
Paper and pasteboard	1	59	87	14
Provisions and oilman's stores	5	62	71	35
Railway plant and rolling-stock ...	*	42	22	13
Rubber manufactures, including tyres, etc.	*	39	48	26
Tobacco	2	48	1,09	24
Wheat	—	—	—	82
Wood and timber	13	15	33	10
Other articles	65	2,37	4,71	1,99
TOTAL (exclusive of Government Stores) ...	4,79	25,27	35,30	21,61

* Less than 50,000 rupees.

TABLE C.

IMPORTS FROM JAPAN. (*See* page 18.)

Value of principal articles imported by sea into British India from Japan.

	1913–14	1919–20	1920–21	1921–22
JAPAN.	In Lakhs of Rupees	In Lakhs of Rupees	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports therefrom—				
Apparel	10	44	31	11
Bobbins	†	21	10	13
Brass, bronze, etc.	*	36	45	2
Brushes and brooms	1	4	2	*
Buttons of all sorts	†	15	15	13
Camphor	12	12	19	14
Cement	*	10	*	17
Chemicals	2	19	14	3
Coal, coke, etc.	13	*	4	30
Copper, excluding ore	41	31	7	2
Cotton hosiery	83	1,22	1,39	45
„ piece goods	18	3,69	8,37	3,67
Cotton twist and yarn	14	61	4,90	2,26
„ other manufactures ...	5	38	27	10
Cutlery	*	9	5	2
Drugs and medicines (other than camphor)	4	10	10	6

† Not separately distinguished. * Less than 50,000 rupees.

—	1913–14.	1919–20.	1920–21.	1921–22.
JAPAN—*cont.*	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports therefrom—*cont.*				
Earthenware and porcelain ..	6	41	18	21
Furniture and cabinet-ware ...	1	3	4	2
Glass and glassware—				
Bangles	*	35	44	
Beads and false pearls	6	16	24	
Bottles and phials	3	19	24	86
Funnels, globes, etc.	1	16	11	
Others	6	41	28	
Haberdashery and millinery ...	15	22	30	7
Hardware	6	74	76	21
Instruments, etc.	1	12	18	6
Iron or steel, excluding ore ...	*	13	5	1
Leather	*	5	4	1
Liquors	*	91	8	9
Machinery and millwork	2	8	12	3
Matches	39	1,87	1,30	1,85
Paints and painters' materials ...	*	8	2	4
Paper and pasteboard	2	27	42	0
Provisions and oilman's stores ...	2	5	4	2
Rubber manufactures	*	2	2	
Silk, raw	1	*	6	*
Silk, manufactures, including yarn, etc.	1,45	3,30	2,96	1,41
Soap	*	2	1	
Spices, ginger	4	1	*	*
Starch and farina	*	9	3	3
Stationery, excluding paper ...	3	13	14	5
Sugar 16 D.S. and above ...	*	9	1	4
Tea-chests	1	11	5	1
Toilet requisites	2	10	8	3
Toys and requisites for games ...	5	25	17	9
Umbrellas and fittings for ...	7	9	9	10
Wood—timber	*	10	2	*
„ manufactures	1	15	20	13
Woollen manufactures, including yarn	*	8	23	1
Other articles	16	94	97	42
TOTAL (exclusive of Government Stores)	4,78	19,15	26,43	13,51

* Less than 50,000 rupees.

TABLE D.

IMPORTS FROM GERMANY. (*See* page 18.)

Value of principal articles imported by sea into British India from Germany.

—	1913–14.	1919–20.	1920–21.	1921–22.
GERMANY.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports therefrom—				
Apparel	16	—	9	10
Building and engineering materials	15	—	2	9
Chemicals	13	*	8	23

TABLE D.—*continued.*

—	1913-14.	1919-20.	1920-21.	1921-22.
GERMANY—*cont.*				
Imports therefrom—*cont.*	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Cotton manufactures, including yarn	1,42	*	9	6
Cutlery	12	*	8	5
Drugs and medicines	10	*	7	7
Dyeing and tanning substances	93	1	1,20	1,43
Glass and glassware	29	*	20	31
Haberdashery and millinery	28	*	7	10
Hardware	72	1	29	61
Instruments, apparatus, etc.	15	*	8	15
Liquors	24	—	7	19
Machinery, etc.	43	—	17	55
Metals, excluding ores	3,86	2	86	1,86
Paper and pasteboard	27	—	19	19
Salt	9	—	35	13
Silk manufactures, including yarn, etc.	23	—	17	2
Stationery	6	*	6	9
Sugar	2	—	1	2
Toys and requisites for games	11	*	5	9
Woollen manufactures, including yarn, etc.	1,07	*	9	16
Other articles	1,84	*	46	75
TOTAL (exclusive of Government Stores)	12,67	4	4,75	7,25

* Less than 50,000 rupees.

TABLE E.

IMPORTS FROM BELGIUM. (*See* page 19.)

Value of the principal articles imported by sea into British India from Belgium.

—	1913-14.	1919-20.	1920-21.	1921-22.
BELGIUM.				
Imports therefrom—	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Cotton manufactures, including yarn	75	1	74	13
Cutlery	2	*	*	*
Dyeing and tanning substances	14	2	13	7
Earthenware and porcelain	4	*	3	1
Glass and glassware	19	11	47	24
Hardware	6	*	4	2
Machinery and millwork	2	—	7	19
Metals—				
Brass, bronze, etc.	1	1	3	8
Copper, excluding ores	9	*	1	3
Iron " "	15	3	17	31
Iron or steel	64	13	93	1,45
Steel	1,05	24	1,32	1,65
Motor cars and motor cycles, etc.	7	*	28	9
Paper and pasteboard	5	*	22	7
Railway plant, etc.	7	*	6	7
Other articles	91	15	83	93
TOTAL (exclusive of Government Stores)	4,26	70	5,33	5,34

* Less than 50,000 rupees.

TABLE F.

IMPORTS FROM CANADA. (*See* page 19.)

Value of the principal articles imported by sea into British India from Canada.

	1913–14.	1919–20.	1920–21.	1921–22.
CANADA	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.	In Lakhs of Rupees.
Imports therefrom—				
Motor cars and motor cycles, etc.	—	1	90	21
Paper and pasteboard	—	—	6	7
Paper making materials	—	—	1	7
Railway plant, etc.	—	1	38	2
Other articles	1	4	3	5
TOTAL (exclusive of Government Stores)	1	6	138	42

APPENDIX II.

INDIAN RAILWAYS COMMITTEE.

SUMMARY OF RECOMMENDATIONS, AND CONCLUSION.

A.—*Unanimous Recommendations.*

1. We propose great changes in the constitution, status and functions of the Railway Board. We recommend that at the head of the Railway Department there shall be a Member of Council in constant touch with railway affairs; and we suggest that with this object there shall be created a new Department of Communications responsible for railways, ports and inland navigation, road transport (so far as the Central Government deals with this subject) and posts and telegraphs. We think the Member in charge of Communications must be an experienced administrator and able to represent his Department both in the legislature and with the public. We do not think he need be expected to be a technical expert.

2. We recommend that, on the one hand, the reconstituted Railway Department should delegate considerably increased power of day-to-day management to the local railway administrations, and, on the other hand, should be relieved from control by the India Office and by the Government of India except on large questions of finance and general policy.

3. We recommend that the Finance Department should cease to control the internal finance of the railways; that the railways should have a separate budget of their own, be responsible for earning and expending their own income, and for providing such net revenue as is required to meet the interest on the debt incurred or to be incurred by the Government for railway purposes; and that the railway budget should be presented to the Legislative Assembly, not by the Finance Member of Council, but by the Member in charge of Railways.

4. We recommend that, subject to independent audit by the Government of India, the Railway Department should employ its own accounting staff, and be responsible for its own accounts. We think that the present accounts and statistics should be thoroughly overhauled and remodelled with the assistance of experts familiar with recent practice in other countries.

5. We recommend that the title of Railway Board be replaced by the title Railway Commission; and that under the Member of Council for Communications there shall be a technical staff consisting on the railway side of a Chief Commissioner and four Commissioners; that of the four, one should be in charge of finance and the organisation and staff of the office, and that the three other Commissioners should be in charge of three respective geographical divisions, western, eastern and southern. The Divisional Commissioners, while normally engaged at headquarters, should devote a substantial portion of their time to personal visits to their divisions.

6. We recommend that the technical staff attached to the Commission shall be strengthened, especially on the traffic side. We think the staff should be divided into six sections, each under a Director, one of whom should be responsible, under the Commissioners, for Ports and Inland Navigation and Road Transport.

7. The changes and additions to the headquarters establishment which we have proposed may cost from £25,000 to £30,000 per annum. But we recommend this expenditure in the interest of true economy. And we point out that salaries in the highest posts of the Indian railway services are at present inadequate, and that, in consequence, not only does the service fail to attract the right men, but it is actually losing to other employment those already in it.

8. We think that the present number of Circles, each with an Engineering Inspector, is unnecessarily great; and we recommend that the number of Engineering Inspectors be reduced, and the money utilised for the appointment of new officers called Inspectors of Traffic.

9. We discuss the rights of management reserved to the guaranteed companies under their contracts, and we recommend that the new Member for Communications should, by agreement, where necessary, with the companies, modify the present position: on the one hand giving to the Railway Commission greater powers in reference to matters such as initiation and enforcement of reforms and some control over the appointment and retention of principal officers, and, on the other hand, giving to the local executive officers greater freedom from interference in matters of everyday management.

10. We suggest that there should be a less rigid regard than hitherto to the claims of seniority.

11. We lay stress on the importance of giving to the Indian public an adequate voice in the management of their railways. And accordingly we recommend the establishment of Central and Local Railway Advisory Councils. We propose that the Central Advisory Council, under the chairmanship of the Minister of Communications, should consist of not more than 25 members, of whom three or four would represent the Departments of Government special concerned; eight or nine should be nominated, according to a scheme to be arranged, by the various associations representing trade and industry; and a similar number, to represent agricultural interests and the travelling public, should be added by the nomination of one member by each of the Provincial Legislative Councils.

12. We recommend the establishment of Local Advisory Councils, similar in constitution to the Central Council and perhaps of half the size, either at the headquarters of each railway, in which case the agent would act as chairman; or alternatively, at each important railway centre, in which case the agents of all the railways concerned should be members, and one of them chairman.

13. We recommend that these councils be established as soon as possible, without waiting for the full introduction of the scheme which we put forward.

14. We recommend the establishment of a Rates Tribunal, consisting of an experienced lawyer as chairman, and two members representing respectively railways and commercial interests; and that there be given to them jurisdiction over all questions of the reasonableness of rates and of facilities; that they be instructed to investigate the conditions attached to "owners'" and "railway's" risk notes at the present time, and to frame new standard forms for use in future; and that there be, under certain circumstances, an appeal from the decisions of the Rates Tribunal to the Governor-General in Council.

15. We recommend that steps should be taken to reduce the delay in settling claims for loss and damage, and that the utmost possible efforts should be devoted, not only by the local officials but by the Railway Commission itself, to stamping out the very serious and widespread abuses in connection with allocation of railway wagons.

16. We discuss the hardships to which third-class passengers are subjected, especially on the occasion of the great "melas" or pilgrimages; and we recommend various measures which, pending the radical improvement of the situation by the provision of adequate facilities, may do something to mitigate present conditions.

17. We recommend that there be a reasonable general increase in Indian rates and fares, and that the sur-taxes at present levied on railway traffic be withdrawn.

18. We recommend that greater facilities should be provided for training Indians for the superior posts in railway service; and that the process of their employment in such posts should be accelerated.

19. We recommend that branch lines shall as far as possible be constructed and worked by the main lines to which they are tributary; and that only if the State is unable or unwilling to provide the funds itself shall the formation of separate branch line companies be encouraged.

20. We recommend that, so soon as financial conditions make it possible for the Government to go forward again with railway development, the Indian States should be called into council, and invited to take part in working out a common plan in the common interest.

21. We recommend an inquiry into the question of inland waterway communication as affected by alleged unfair railway competition.

22. We recommend a thorough investigation, by a Commission of the most competent experts whom the railway world can furnish, of the gauge question as it affects and is affected by the potential future development of the Indian system as a whole.

23. We recommend that the system of management by companies of English domicile should not be continued after the termination of their existing contracts, and that these companies should not be permitted further to increase their share capital.

24. We recommend that no steps should be taken towards establishing combined companies, both with English and with Indian domicile.

B.—Divergent and Supplementary Recommendations.

BY THE CHAIRMAN; THE HON. MR. V. S. S. SASTRI; MR. E. H. HILEY; MR. PURSHOTAMDAS THAKURDAS; AND MR. J. TUKE.

25. We recommend that the undertakings of the guaranteed companies, as and when the contracts fall in, be entrusted to the direct management of the State, and that when the contract with the East Indian Railway terminates in 1924 the Oudh and Rohilkhand State Railway be absorbed into that undertaking.

26. We recommend that the whole of the capital for the future development of the Indian railways be raised directly by the State.

We do not recommend that the provincial Governments shall take any part in the work.

27. We recommend that the money required to put the existing railways into proper shape should be raised, even at to-day's prices, as fast as it can be economically spent, but we do not recommend the immediate raising of capital for the extension of the existing system.

28. We recommend that Government issues for railway purposes should in England take the form of ordinary sterling loans, while in India rupee loans might perhaps be earmarked as for railway purposes.

29. We support the recommendation of the Mackay Committee that in periods of easy money funds should be raised in excess of immediate requirements so that it may not be necessary to have recourse to the market at a time of stringency.

30. We recommend the establishment of a systematic organisation to familiarise the population of India with the idea of subscribing to Government loans, and specially to reach through local Indian agencies the mass of the people to whom the idea of investment has hitherto been strange.

By Sir H. P. Burt; Sir R. N. Mookerjee; Sir A. R. Anderson; Sir G. C. Godfrey; and Sir H. Ledgard.

25A. We recommend that the system of both State and company management should be continued, and that Government should not be committed to a policy of State management only for all railways. We accordingly propose a scheme for creating Indian domiciled companies to manage the East Indian and, possibly, the Great Indian Peninsula Railways. The cases of other lines to be considered on their merits when the contracts become terminable.

26A. We agree that much capital must be raised direct by the State, and that this should be done by the Central Government. We also recommend, from 1924 onwards, that the fullest use be made of Indian domiciled companies, as proposed under our scheme, as a means of providing funds from independent sources. We also hold that as the total amount required is so large, no channel through which money can be obtained on reasonable terms should be neglected; for instance, further debenture loans through existing companies might be negotiated.

27A. We agree that money should be raised as fast as it can be economically spent. Rather than that new development should be arrested, we recommend that the assistance of private enterprise should be enlisted to provide capital for new lines.

28A. We recommend that Government borrowings for State and guaranteed railways should be by direct Government loans advertised, whether in England or India, as being for railway purposes.

29A. We agree in supporting this recommendation of the Mackay Committee.

30A. We recommend that the assistance of all banks in India should be enlisted when money is required to be raised, and that independent offers of loans on special conditions should not be lightly set aside.

Reservations by Sir H. P. Burt.

I cannot subscribe to the recommendation, in para. 181 of the Report (para. 22 above), that "a thorough investigation of the gauge problem is urgent at this moment," and should be undertaken by a special Commission. No one will deny that it would have been better for India had it been possible to avoid a break of gauge, and that it was unfortunate that such a broad gauge as the 5 ft. 6 ins. was originally decided upon as the standard, especially as full advantage has not been taken of that gauge in determining the running dimensions of the rolling-stock. But, at the same time, it will be accepted by those who have studied this question that, having adopted the 5 ft. 6 ins. standard gauge, India would never have had at the present day even the relatively small total mileage she now has if that gauge had been insisted on so as to secure uniformity. With the growth in mileage of the standard gauge, the adoption of a

smaller and less costly gauge became imperative if the poorer districts of India and the development of India's resources were not to suffer from the want of railway communications. It was financially impossible to do otherwise. Thus the mileage of the two principal gauges has grown until we now have practically 16,000 miles of the 5 ft. 6 ins. and over 15,000 of the metre [illegible].

2. There is no alternative now but to deal with the question from a practical standpoint, recognising existing facts and possibilities. The battle of the gauges has been fought out more than once in the past; it is no longer a matter for academic discussion. No reader of our Report can fail to appreciate that the crying need of the moment, and the insistent demand of the future, is and must be, not that the whole structure of the railway system should further be reviewed, or that its equipment should be adjusted to conform to new standards, but that the railways which exist should be brought up to a high standard of efficiency with the least possible delay. Even with the utmost economy this will tax all the resources of Government and all the financial assistance which can be enlisted.

3. To divert attention at this stage, from the position as I conceive it to be, by an enquiry whose results either must be purely negative or else must set up a competing demand for expenditure on a vast scale, yet of manifestly less pressing urgency, would in my judgment be particularly unfortunate. The only effect of instituting such an enquiry would be to furnish a fresh reason for postponing expenditure which should be undertaken without delay to meet the requirements on which we have laid so much stress.

4. Even if new construction be not entirely suspended for several years to come, it cannot, at best, be undertaken on any large scale, and in respect of such new projects as may come under consideration, it must now, I consider, suffice to deal with the gauge problem as merely incidental to, and with regard to the immediate necessities of the particular case. The future policy in regard to the gauge problem so far as it affects new projects and conversion where necessary from time to time may well be left to the Railway Authorities in India to settle.

5. I would add that in my opinion the inconveniences of break of gauge in India are often exaggerated. The Presidency towns and ports of Calcutta, Bombay and Madras, and the port of Karachi, are all connected with each other and with Delhi on the same, the standard, gauge, all the strategic lines north of Delhi being on the same gauge; while the complaint in respect of transhipment between the broad and metre gauges is due rather to lack of rolling-stock than to an objection to transhipment in itself. On these points no evidence whatever has been taken by the Committee. The inconveniences of transhipment could, of course, be removed, but only at an immense cost which, in my view, would be prohibitive unless all improvement and development of railways were arrested for years.

While I have agreed in the recommendations made in Chapter IV of the Report, regarding the reorganisation of the Railway Department of the Government of India, and while I think they will meet the requirements of the present position, I must record my opinion that the staff proposed for the organisation of the Railway Commission will be inadequate to cope with the work which will be thrown upon it, if State management is generally adopted.

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APPENDIX III.

DETAILED STATEMENT OF THE QUANTITY (IN POUNDS) AND THE COUNTS (OR NUMBERS) OF YARN SPUN (BRITISH INDIA AND INDIAN STATES).

Count or Number.	Twelve Months, April to March.		
	1919-20.	1920-21.	1921-22.
1	796,547	1,482,767	1,827,353
2	3,637,205	3,006,051	3,430,317
3	1,888,948	2,681,287	3,134,543
4	4,208,626	4,323,119	5,345,049
5	609,720	712,251	1,873,167
6	7,840,903	9,428,390	10,782,543
7	10,382,918	10,225,050	18,556,370
8	4,305,746	4,971,056	5,679,331
9	6,423,414	9,262,920	12,052,841
10	44,093,650	37,850,185	35,391,747
Total, Nos. 1 to 10 ...	84,187,677	83,943,074	98,073,261
11	45,027,340	46,377,420	53,809,562
12	45,517,102	45,055,806	44,475,485
13	16,008,100	19,801,450	24,910,025
14	26,712,850	28,715,688	27,475,784
15	12,828,684	14,806,245	15,775,905
16	41,354,731	39,772,425	31,585,379
17	13,207,581	14,205,196	19,373,639
18	20,726,855	22,897,336	19,259,948
19	6,732,601	7,820,445	12,508,831
20	118,884,143	120,075,315	122,121,701
Total, Nos. 11 to 20 ...	346,999,987	359,527,326	371,296,259
21	38,750,715	45,783,656	43,041,183
22	48,334,846	47,350,789	45,472,808
23	3,819,500	4,299,428	4,965,555
24	40,797,977	49,971,313	55,731,709
25	1,112,335	1,067,859	1,367,695
26	8,335,666	10,045,886	12,042,481
27	4,161,976	5,757,423	4,839,684
28	6,899,775	9,054,630	8,605,575
29	465,232	573,901	1,990,804
30	30,978,890	25,180,863	25,104,462
Total, Nos. 21 to 30 ...	183,656,912	199,085,748	203,161,956
31	1,177,370	957,216	1,150,999
32	6,490,463	7,243,688	8,644,997
33	1,139,111	857,850	77,683
34	3,442,951	2,579,896	1,921,175
35	56,186	39,436	34,335
36	837,915	769,466	1,255,349
37	4,147	12,151	4,372
38	387,916	349,693	375,524
39	48	162	—
40	3,544,328	2,214,831	3,435,752
Total, Nos. 31 to 40 ...	17,080,435	15,024,389	16,900,186
Above 40	3,559,967	2,067,168	2,389,279
Wastes, etc.... ...	275,295	354,892	492,459
GRAND TOTAL	635,760,273	660,002,597	692,313,400

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Panama and Costa Rica 1*s.* 0*d.* (1*s.* 1½*d.*)
Poland 2*s.* 0*d.* (2*s.* 1½*d.*)
Roumania 2*s.* 9*d.* (2*s.* 11*d.*)
Serb-Croat-Slovene Kingdom (Yugo-Slavia) 1*s.* 0*d.* (1*s.* 1½*d.*)
Siam 1*s.* 3*d.* (1*s.* 4½*d.*)
South Africa ... 1*s.* 6*d.* (1*s.* 7½*d.*)
Spain 1*s.* 6*d.* (1*s.* 7½*d.*)
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Czecho-Slovakia ... 1*s.* 3*d.* (1*s.* 4½*d.*)
Denmark 1*s.* 6*d.* (1*s.* 7½*d.*)
Dominican Republic and Hayti 1*s.* 9*d.* (1*s.* 10½*d.*)
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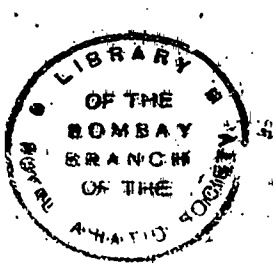
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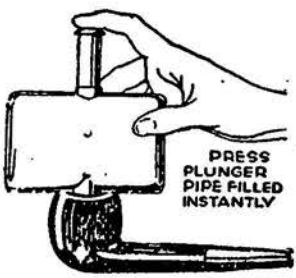

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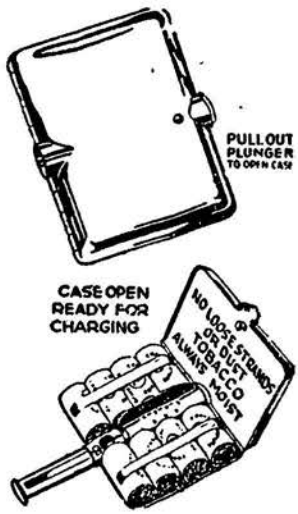

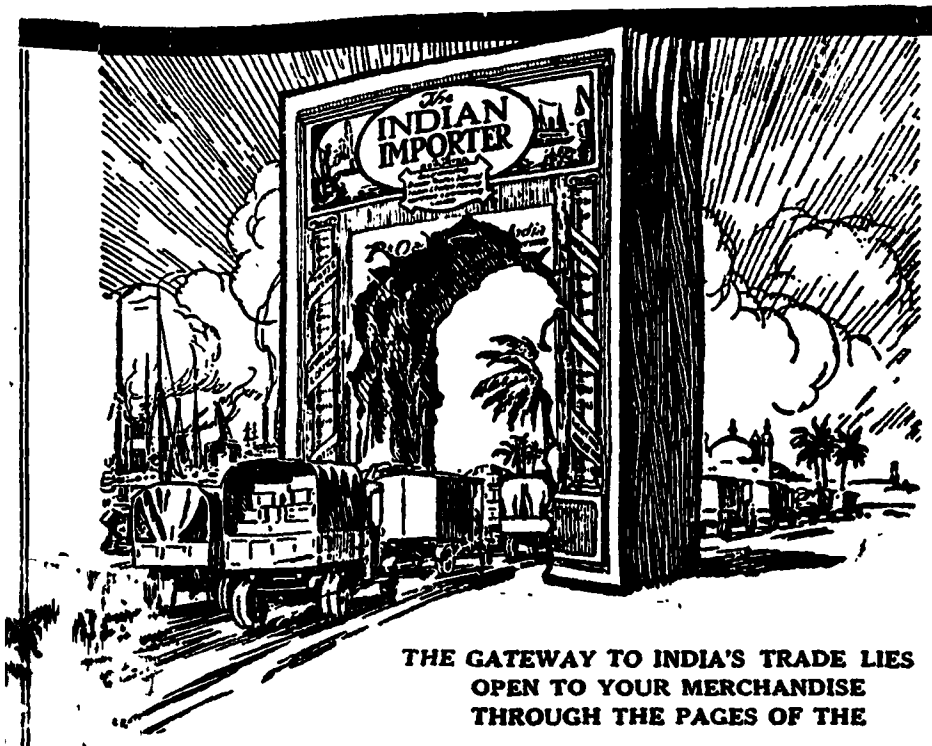

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